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An Approach to Assessing Farm-Scale Adaptation to Climate Change: The Case Study of Prespa Park

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Abstract: Developing appropriate adaptation practices and coping mechanisms for climate change and evaluating the variables affecting households' choices are critical for ensuring sustainable agricultural production. In addressing the above issues, this paper presents the results of a multi-method approach at the farm level conducted in the case study of Prespa Park. The data collected by a participatory process were analyzed using descriptive statistics, the 5-point Likert scale, the Delphi method, and a multinomial logit model. The typology of coping and adaptation practices to climate change preferred by households and the reasons for those who failed to adapt are presented. Results revealed that improving technologies for increasing soil health was the most preferred adaptation practice, followed by planting early maturing and drought-tolerant food crop varieties, practicing water-saving irrigation methods or technologies, planting agroforestry systems, and finally perennial agriculture. In terms of coping mechanisms, engaging in off-farm activities was the most used, followed by collecting fuel wood for sale, selling assets like livestock, increasing water storage capacity, and changing farming structure. Small farm holdings, financial constraints, limited off-farm employment opportunities, inadequate infrastructure and technology, and a lack of information about adaptation practices were identified as the main barriers to undertaking adaptation. Performing the multinomial logit analysis, the variables that positively and significantly improve households' ability to adapt to climate change were identified and evaluated. The results of this study should help policymakers and climate change planners come up with better practices for the agricultural sector to adapt to the effects of climate change.

Introduction

The problem of climate change has grown in importance during the last few decades. One of the sectors most vulnerable to climate change is agriculture, since agricultural productivity is weather- and climate-related and, as De Frutos *et al.* (2018) claim, is so sensitive to climatic changes. Many studies (Tol *et al.* 2004; Mozny *et al.* 2009; Krishnan *et al.* 2011; Shrestha *et al.* 2013; IPCC, 2014; Mandryk 2016; Niles *et al.* 2016; Lane *et al.* 2018; Elias *et al.* 2019; Aryal *et al.* 2020) are undertaken as concerns about climate change and how it may affect agriculture grow.

The most effective way for developing countries to confront the threats caused by climate change, as Adger *et al.* (2003) point out, is adaptation. Climate change adaptation efforts in agriculture, according to Mandryk *et al.* (2017), van Dijl *et al.* (2015), and Roesch-McNally *et al.* (2020), encompass a wide range of activities at various scales connected to decreasing agricultural exposure and vulnerability to changes, such as developments in technology or changes in production practices. According to Schattman *et al.* (2021), this is required to protect farmers' and rural communities' means of livelihood and provide food security for households. It is critical to comprehend the coping and adaptation measures used by smallholder farmers in climate vulnerability hotspots to mitigate climate hazards. This issue is addressed in this study.

Iglesias *et al.* (2012) say that climate change adaptation happens on two main levels: (a) the farm level, which, as Nicholas and Durham (2012) say, is based on the reasonable individual interests of farmers and looks at the small decisions that farmers make; and (b) the macro-level, which is also called policy-driven adaptation with government involvement and is based on collective needs. It looks at agricultural production at the regional and national levels. Adaptation at the farm level is the most important because local actors are the first to recognize the seriousness of climate change. This study's research was conducted at the farm level.

One main goal of this study was to provide an answer to the following: What are the variables that affect the choices made by farmers about adaptation practices to the changing climate in Presoa Park? Deressa *et al.* (2009) demonstrated that understanding these variables helps policymakers strengthen adaptation by investing in them. To do this, many modeling methods have been employed in literature. Because of its well-established theory and accessible procedures, regression analysis is commonly employed in climate change adaptation. So, for this study, descriptive statistics were used to look at information from 358 households in the basins of Prespa Park in 2023 about household characteristics, institutional variables, and agro-ecological parameters. A multinomial logit model was employed then to assess the variables that affect households' decisions on adaptation practices.

Given the aforementioned, a two-step empirical analysis was used in this study. The first empirical analysis identified and ranked the coping and adaptation practices adopted by farmers to reduce the effects of climate change. The second used a multinomial logit model to evaluate the relationship between each adaptation strategy that farmers identified and the factors that affected it.

The contribution of this study is related to the use of an approach based on an integrated and participatory process (a field survey, more than 40 in-depth interviews with stakeholders and authorities, a one-day workshop, and a Delphi survey) developed and employed to identify the adaptation practices and coping mechanisms and the variables affecting households' choices.

1. Literature Review

In the last 30 years, two core concepts in the literature on society's reactions to climate change have emerged: coping and adaptation. Within the fields of practice, policy, and research, there has been discussion on the meaning of these concepts. In terms of elucidating social reactions to environmental stress, coping comes before adaptation. As Eriksen *et al.* (2005) outlined, coping practices are the temporary actions farmers take to mitigate the negative consequences of climate change, which typically aim to lessen exposure to the effects of socio-ecological stressors, either as forecasted or as experienced. They might not always be sustainable in terms of the economy or the environment. In the order in which they are most likely to occur, the following five main coping strategies are listed by Ellis *et al.* (2019). looking for new sources of income; relying on reciprocal obligations (sharing resources like labor and seed); temporarily moving to a smaller home; selling fixed assets (like land); and decreasing the size of movable assets (like livestock). When all other coping mechanisms have been tried, permanent distress migration is frequently the last option.

But adaptation is a more complex kind of coping. IPCC (2014) defines climate change adaptation as "adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderate harm or exploit beneficial opportunities." Many overlapping approaches have been used to define the ability to adapt. A large number of research studies (Kandlinkar and Risbey 2000; Smit and Skinner 2002; Adger *et al.* 2003; Smit and Wandel 2006; Lobell *et al.* 2008; Di Falco *et al.* 2011; Olesen *et al.* 2011; Below *et al.* 2012; Kates *et al.* 2012; Acosta *et al.* 2013; Satishkumar *et al.* 2013; Rodriguez *et al.* 2014; Wood *et al.* 2014; Aryal *et al.* 2020; Lamichhane 2020) have documented that adaptation is a crucial component of the response to climate change.

In literature of adaptation to climate change, relevant research is focused on different adaptation farm practices such as using drought-resistant crop varieties (Anik *et al.* 2021; Ponce 2020; Kebede *et al.* 2019); crop diversification (Bradshaw *et al.* 2004; McCord *et al.* 2015; De Boni *et al.* 2022); crop rotation (Wood *et al.* 2014); practicing improved irrigation (Finger *et al.* 2011; van Dijl *et al.* 2015; Roesch-McNally *et al.* 2020) and soil conservation techniques (Kahil *et al.* 2015; Ureta *et al.* 2020); adjusting planting dates (Ponce, 2020; Masud *et al.* 2017); managing land use in relation to climate change (Klein *et al.* 2013; Liu *et al.* 2016); developing technologies for adaptation in the context of climate change (Foudi and Erdlenbruch 2012; Alvi and Jamil 2018); shifting to non-farm income activities (Marie *et al.* 2020); implementing complementary policies that impact both socioeconomic issues and climate (Agrawala and Fankhauser 2008; Chimbwera 2010), and farm financial management (Smit and Skinner 2002; Berrang-Ford *et al.* 2011); using improved livestock breeds (Faisal *et al.*

2021); and micro-insurance (Brouwer and Akter 2010). For policymakers, evaluating how farming communities are dealing with the effects of climate change offers crucial information.

In order to develop an adaptation farm practice to climate change, according to several researchers (Norries and Batie 1987; Brooks *et al.* 2005), it is critical to identify and analyze factors that influence, in a positive or negative way, the households' decision to adopt it. Deressa *et al.* (2009) showed how having a solid understanding of these variables might serve as a suitable foundation for developing proposals for policies in reaction to climate change. The reviewed literature (Deressa *et al.* 2009; Obayelu *et al.* 2014; van Dijl *et al.* 2015; Marie *et al.* 2020) indicates that the variables that affect farmers' adoption practices across regions include socioeconomic factors, household head characteristics, services and resources or existing inputs, institutional factors, agro-ecological parameters, and cultural factors.

2. Methodology

2.1. An Overview of the Study Area

Prespa Park, the subject of this case study, became the first transboundary protected area in the Balkans, southeast Europe, after the Prime Ministers of the three nearby nations (Albania, Greece, and North Macedonia) signed a Joint Declaration in February 2000 (Grazhdani 2024). According to Grazhdani (2014a), it is a high-altitude basin within a 2,500 km^2 basin that includes two interconnected tectonic lakes, the Macro Prespa (259.4 km^2) and Micro Prespa (47.4 km^2), located at roughly 850 m above sea level in a karstic system with no natural surface outlet, as well as mountains that rise above 2,600 m above sea level. Prespa Park is a unitary area with a rich common natural and cultural heritage, despite being situated at a three-way border intersection. In each of the three states, national protected areas have been established. Nearly 30,000 people live in 12 villages on the Albanian side, 13 villages on the Greek side, and 43 villages on the North Macedonian side (Grazhdani 2016).

Figure 1. Prespa Park area
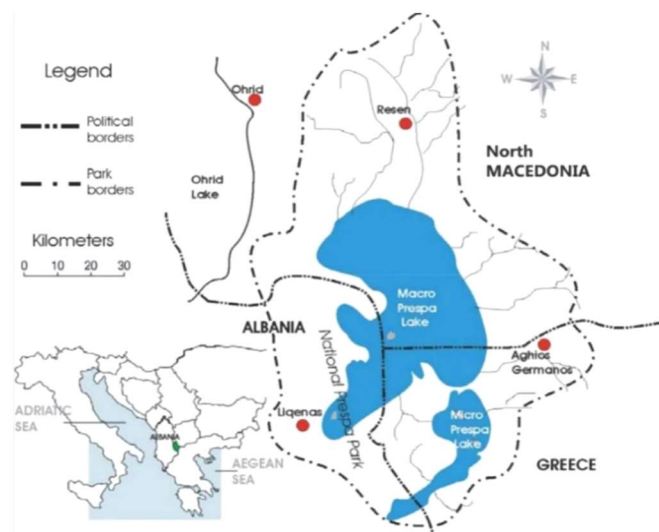
Agriculture is the primary source of revenue for residents on all three sides of Prespa Park, where about 70% of the labor force is employed (Grazhdani *et al.* 2010). In most cases, stock-breeding, fishing, and forestry provide complementary income. The secondary sector is relatively developed in North Macedonia (primarily in apple processing), whereas a bean packaging unit has been operational in Greece since 2007. The tertiary sector has grown rapidly in recent years, primarily through tourism service enterprises (Grazhdani 2014b).

As outlined by Grazhdani (2014c), there are roughly 1,450 agricultural holdings in the Albanian part of Prespa Park, all of which are mixed crop and stock-breeding with 2,185 hectares of land, only 160 of which are irrigated (7.3% of the total), and there is a small percentage of mechanization. With very little access to the organized market, the main crops are cereals, corn, vegetables, alfalfa, and vines, intended primarily to meet household requirements.

There are about 4,500 agricultural crop properties on the side of North Macedonia, with 11,000 hectares of agricultural land in total, 80% of which is irrigated in some way, although only about half of the land is actually irrigated. The most important crop in the area is the cultivation of fruit trees, mainly apples (3,000 ha). The main

crop, in addition to fruits (apples, other fruit, and vines), is wheat (1,200 ha). Although the level of mechanization appears to be high, most machinery is old and of low horsepower.

The cultivation of the white-seed dry "beans of Prespa" in an area of around 1,000 ha of irrigated land near the two lakes, which provides 75% of the total agricultural income, occupies the majority of the approximately 370 agricultural holdings in the Greek Prespa. Another 150 ha are planted with other irrigated crops (corn, alfalfa).

According to the Köppen climate classification, the park's climate is primarily Mediterranean, with influences from the continent, and, as Markovic *et al.* (2017) argue, the Prespa basin is one of Europe's most vulnerable regions to climate change. In Prespa Park, climate change is already present and accelerating, highlighting the need for quick, medium-term, and long-term solutions that can assist everyone involved in agriculture in minimizing its negative effects. People are being forced to confront these effects in novel and creative ways.

Adaptation to current climate variability is occurring, but there has been little action to mitigate the effects of climate change. These local adaptations, however, have not been valued or documented to date; thus, recognizing and documenting local adaptation strategies is an important first step in strengthening local people's resilience to climate change. In general, there isn't any ongoing regional or local research examining strategies for adaptation to climate change in the Prespa Park cross-border region. Given the potential for serious agricultural consequences, practical adaptation strategies for climate change are critical.

The findings of this paper can help policymakers and decision-makers develop short- and long-term integrated policies and measures for climate change adaptation strategies in Prespa Park and other similar areas.

2.2. Data Collection and Data Analysis

Operationally, the data used in this study came from a field household questionnaire survey conducted in the Prespa Park region between September and October of 2023, more than 30 individual interviews with local stakeholders and authorities, and a one-day participation workshop.

A wide variety of questions were needed to be included in the questionnaire items of the survey in order to evaluate farmers' coping mechanisms and practices for adapting to climate change and analyze the factors influencing farmers' decisions to do so. Thus, the household questionnaire, which was developed in accordance with the research's objectives, contained a number of questions that could provide information about the socioeconomic characteristics of the study farm households as well as their perceptions of climate change, how it has affected their way of life, and what adaptation practices and coping mechanisms they have developed or those they believe to have been used to lessen its effects. The questions dealing with factors affecting farmers' choices of adaptation practices to climate change were also included.

A team of three researchers who are experts in survey design and construction accurately wrote the first version of the questionnaire items. Then, a panel of experts, including survey researchers, economists, experts in climate change, and designers of non-market approaches, reviewed the questionnaire items to make sure they were valid in terms of both content and construct. The questionnaire was adjusted as appropriate in accordance with the expert panel's views and recommendations. In order to clarify the questionnaire's comprehensiveness, content validity, and any potential areas of ambiguity, a pilot field test was conducted (Fink 2013; Nardi 2013). To get comments on the questionnaire's clarity and usability, 25 farm households were selected as a sample. In the final version of the questionnaire, the changes suggested by the expert panel and the pilot field test have been made.

The sample size for this investigation was determined using the Dillman *et al.* (2007) method. 300 households should be included in the sample. In September 2023, 550 questionnaires were distributed to randomly selected households in Prespa Park due to the low response rate and high number of undeliverable addresses. After completion, the questionnaires were returned. 358 questionnaires, or 65.1% of the total, were usable.

Each questionnaire was reviewed to make sure it was appropriate for the study before being included in the database. Due to their incompleteness, certain questionnaires were not included in the final data analysis. After variables and data transformations, a sample of the data was produced for data analysis. After entering all of the data into a database file, the necessary calculations, formatting changes, and the creation of dummy variables were performed. After that, the database file was imported into the STATA: Release 18 (StataCorp 2023) program, which was used to compute descriptive statistics and perform all estimation procedures.

Following the field survey, there were 30 individual interviews with local stakeholders and authorities as well as a one-day workshop.

2.3. Variable Explanations and Multicollinearity Analysis

This study employed a multinomial logit model to examine the factors that influence households' decisions on a particular practice of climate change adaptation. To do this, in the first stage, the dependent and independent variables are selected. In this study, as dependent variables, the following most important adaptation practices were used: (1) improved crop varieties; (2) increased soil health; (3) efficient irrigation management; (4) shifting from crop production to plant agroforestry systems; and (5) perennial agriculture. The dependent variables (practices for adapting to climate change) were binary. The number 1 records a yes vote, and the number 0 records a no vote.

The choice of independent variables for model estimation is the most subjective and controversial issue. A preliminary list of variables affecting households' decisions on adaptation practices was first established based on (1) a review of the literature, (2) the availability of data, and (3) correlations between the identified variables of interest. Then, it was presented to the participants of a one-day workshop where the participants were asked to give their opinion on it. Next, at the end of the workshop, a final list was made. The following categories represent the selected independent variables employed in this study's multinomial logit model: sociodemographic household characteristics, institutional factors, and agro-ecological parameters. In the first category were included independent variables like household age, education, farming experience, off-farm employment, wealth status, household size, off-farm employment, and farm size. The availability of credit, the ease with which information about climate change is accessible, and the level of social capital, such as farmer-to-farmer extension services, were also included in institutional variables. Awareness of rainfall decline and temperature increases were included in the model as agro-ecological variables.

Regression analysis is frequently associated with issues of multicollinearity among independent variables. Multicollinearity in multiple regression is when an independent variable has a strong correlation with one or more other variables in the model. In this study, in order to avoid multi-collinearity, in the second stage, correlation tests were performed among all independent variables. The variance inflation factor (VIF) (Belsley *et al.* 1980) and Pearson's product moment correlation coefficient (r) (Walford 1995) were used in this study to determine if multicollinearity was present in the model and to eliminate it by screening and removing some of the independent variables. A good "rule of thumb" when using a correlation matrix to determine if multicollinearity exists in a model is to remove variables that have a Pearson correlation value of 0.7 or higher (Park 2009; AcaStat 2014; Grazhdani 2015). Regarding the *VIF* values, the higher the value of *VIF,* the higher the possibility of multicolinearity. It is accepted that a *VIF* value greater than 4 indicates multicollinearity (Miles and Shevlin 2001; Grazhdani 2016). Grazhdani (2016) provides more details about the procedure we used for variable multicollinearity analysis.

Independent variables were removed through an iterative process. The procedure was employed through the following sequential steps: First, the *VIF* value for each independent variable was calculated. The explanatory variable with the highest *VIF* was then excluded. The iterative elimination process was terminated when the threshold *VIF* value of 4 was reached. At this time, additional eliminations based on *r* values were carried out. Therefore, using STATA's corr command (Park 2009), a bivariate correlation study was carried out. The final selected variables are presented in Table 1.

2.4. Data Analysis Methods Applied

2.4.1. Delphi Method

According to Skulmoski *et al.* (2007), the Delphi method is one of the most common methods, which entails a group of experts coming to an acceptable level of agreement on the attributes of interest. The Delphi method, which seeks the most acceptable agreement among the opinions of a "group of experts," is described as a series of sequential questionnaires or "rounds" interspersed with controlled feedback. In order to arrive at a consensus, data from surveys is administered and then applied iteratively, with highly ranked items from one questionnaire being utilized to formulate the next. This iterative process starts by identifying areas of agreement and disagreement, then moves on to changes based on previous questionnaire responses.

For the present study, fifteen experts were selected to participate in the Delphi process and provide email responses to the questionnaires. Through successive rounds, participants created a list of coping mechanisms, the relevant adaptation practices needed to adapt to climate change, and the main barriers to undertaking adaptation.

2.4.2. Multinomial Logit Regression Model

The Logit and Probit models are the two most used models in the literature. A multinomial logit (MNL) or multinomial probit (MNP) regression model would be the ideal econometric model, given that several adaptation options are evaluated. In this study, a MNL model was used to analyze the determinants of farmers' decisions because it is widely used in adaptation decision studies involving multiple choices. The model has a major flaw that comes from the independence of irrelevant alternative (IIA) property. This property says that the ratio of the odds of choosing any two options is not affected by the properties of any other option in the decision set (Hausman and McFadden 1984; Tse 1987).

The MNL model was first run and checked to see if the independence of the irrelevant alternatives (IIA) assumption was true using both the Hausman specification test and the seemingly unrelated post-estimation procedure (SUEST). Both tests failed to disprove the null hypothesis that the practices for adapting to climate change are independent, indicating that there is no evidence to refute the appropriate specification of the adaptation model. So, it made sense to use the MNL specification on the data set to model how farmers will adapt to climate change.

In the MNL model, the question is how changes in the elements of x, which represent a set of conditioning variables, affect the response probabilities ($P(y = \mathbf{j}|\mathbf{x})$, j = 1, 2,..., J), where y represents a random variable with the values 1, 2,..., J. The MNL model has the following response probabilities (Green 2008):

$$P(y = j|x) = \frac{\exp(x\beta_j)}{\left[1+\sum_{h=1}^{J} \exp(x\beta_h)+\varepsilon, \ j=1,...,J\right]} \tag{1}$$

In this study, y represents adaptation practices, x represents various household, institutional, and agro-ecological attributes, and β is a vector of estimated attributes. Differentiating Equation (1) with regard to each independent variable yields Equation (2). This allows one to determine the marginal effects (ME) of the pertinent variable:

$$ME = \frac{\partial P_j}{\partial x_k} = P_j(\beta_{jk} - \sum_{j=1}^{J-1} P_j\,\beta_{jk}) \tag{2}$$

The following econometric model function was estimated to perform the multinomial logit analysis:

Adaptation practice = β_0 + β_1Gender + β_2Age + β_3Edu + β_4FarmExp + β_5HouseholdSize + β_6WealthStatus + β_7FarmSize + β_8OffFarmEmploy + β_9InfToClimChange + β_{10}FarmToFarmExten + β_{11}AccessToCredit + β_{12}RainDecline + β_{13}TempIncrease + ε (3)

where: *Gender*: the respondent's sex (male or female); *Age*: the respondent's age in years; *Edu*: the respondent's degree of education; *FarmExp*: the number of years spent by the respondent making decisions related to farming; *HouseholdSize*: the number of the respondent's household members; *WealthStatus*: the financial standing of the respondent; *FarmSize*: the size (in ha) of the respondent's farm; *OffFarmEmploy*: possibilities for employment outside of the farm; *AccessToCredit*: access to credit; *InfToClimChange*: access to climate change information; *FarmToFarmExten*: farmer-to-farmer extension service; *RainDecrease*: Keep in mind that rainfall is decreasing. *TempIncrease*: recognition that the temperature is rising; and ε: the error term.

3. Results and Discussions

3.1. Typology of Households' Adaptation Practices and Coping Mechanisms to Climate Change in Prespa Park

The main adaptation strategies and coping mechanisms for climate change that Prespa Park households offer are defined in this section. In the selection and evaluation process, the following four sequential phases were conducted: During the first phase, a comprehensive list of adaptation practices and coping mechanisms for climate change was established. This is done using information gathered from household responses to the survey questionnaire part dealing with adaptation practices and coping mechanisms that they have implemented or those they believe to have been used to lessen the negative effects of climate change, as well as the findings of individual interviews with local stakeholders and authorities.

During the second phase, a one-day workshop was organized and attended by about 30 participants who had a good knowledge of the problems under investigation, including climate change experts, economists, academicians, representatives from agriculture, and protected area management authorities who work directly or indirectly on the study area. In this workshop, a series of brief presentations and panel discussions were presented to inform participants about the key principles of climate change, potential farmers' coping and adaptation practices to climate change, and their features in Prespa Park. Then, the list of adaptation practices

and coping mechanisms developed during the first phase was presented to the participants of the workshop. Next, the participants were asked to create a preliminary list of key coping and adaptation practices that households in Prespa Park may develop, as well as the reasons why they may fail to adopt them. The meeting was characterized by intense debate among the participants. Finally, at the end of the workshop, a preliminary list of 12 adaptation practices and 10 coping mechanisms for climate change was made.

During the third phase, the most important adaptation practices provided by the Prespa Lakes households were identified using a Delphi survey. In the first run of the Delphi survey, a questionnaire of 12 adaptation practices identified by the workshop was emailed to fifteen different experts (Delphi members) to be filled out. A direct ranking technique was used: each Delphi expert gave a value using a 5-point Likert scale (from 1 = not important to 5 = extremely important). At the end of the first Delphi round, excluding less-significant adaptation practices, the former list was shortlisted. To accomplish this, the Cronbach alpha α statistics were used. The second round's questionnaire was created using the nine adaptation practices that were chosen during the first round. At the end of the second Delphi round, four assessment items were deleted, leaving five (Figure 2).

Figure 2. Five more important adaptation practices
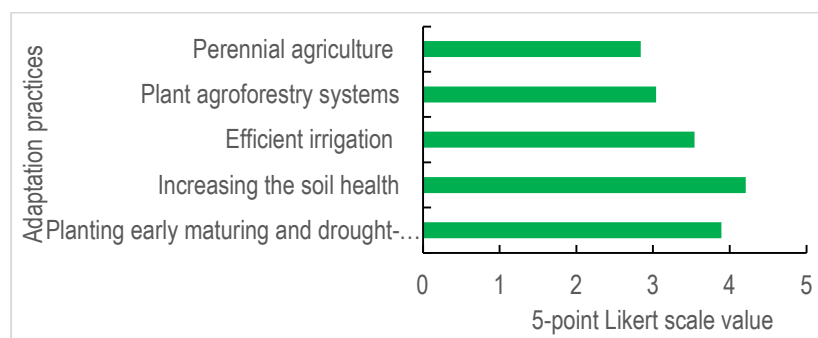
Source: The author's collected and elaborated survey data for 2023

Improved technologies for increasing soil health are the main adaptation practices used by respondents. It is a key component in assisting farmers in dealing with drought. Cropping rotations, the use of cover crops and crop residues to protect soils from wind and water erosion, reduced tillage, the cultivation of cover crops with legumes, adding manure and compost, and fallow techniques are all tried-and-true methods that farmers may use right now. These practices, as De Gryze *et al.* (2009) highlight, make soils richer in organic matter, better able to retain soil moisture once it gets there, prevent erosion, improve soil structure, and increase biodiversity in the system. According to Rosenzweig and Tubiello (2007), in addition to strengthening stability and resilience to additional droughts and/or floods soon, they also assist in reducing climate change by sequestering carbon in the soil.

Planting early maturing and drought-tolerant food crop varieties is another of the main adaptation practices employed by smallholder farmers in Prespa Park. This practice helps to reduce the impact of climate change on farming activities impacted by reduced rainfall patterns, irregular rainfalls, or drought and, as De Boni *et al.* (2022) outline, may contribute to improving biodiversity, solving the problems of water scarcity, and making the agroecosystems more resilient. The fundamental advantage of this adaptation practice is that it enables farmers to grow crops with higher and more stable yields, as well as early maturity, disease resistance, and higher nutritional value.

The next most important adaptation practice is practicing water-saving irrigation and water-management methods or technologies, including advanced irrigation systems like drip and deficit irrigation. Luquet *et al.* (2005) claim that the most water-efficient irrigation technology is drip irrigation, which can significantly reduce a farm's water use by controlling the precise moisture requirements for each plant while improving crop yields and quality. According to Al-Ghobari and Dewidar (2018), deficit irrigation (DI) is the practice of watering plants less frequently but more precisely. This method tries to maximize water productivity and stabilize yields, as opposed to maximizing them by restricting water applications to drought-sensitive growth stages. DI has received a lot of attention as a valuable and sustainable production strategy in dry or semi-arid areas.

Shifting from crop production to plant agroforestry systems is one of the most significant adaptation practices chosen by households. Agroforestry is simply the planned integration of trees and agriculture. It has been shown in numerous studies to provide numerous economic and environmental benefits (Oelbermann and Smith 2011; Zoysa and Inoue 2014). Every plant in an agroforestry system is chosen for a specific function; species are chosen so that plants will cooperate rather than compete (Luedeling *et al.* 2016). In line with this,

Zoysa and Inoue (2014), indicted that agroforestry, which increases resiliency to climate impacts on farming systems, plays a significant role in climate change adaptation, such as reducing the impact of extreme weather events (drought, heatwaves, cold waves, heavy rain, and floods). It also improves soil and water availability, attracts pollinators, and increases biodiversity. Aside from its socioeconomic benefits, Murthy *et al.* (2016) have well documented that agroforestry is the most sustainable strategy due to its effects on soil conservation, biodiversity protection, and carbon sequestration.

Among the major adaptation practices found in the Prespa Park basin, perennial agriculture is the one that was least used. Previous studies have shown that perennial crops have the capacity to sequester carbon, improve erosion control, soil health, pest management, and biodiversity (Reynolds *et al.* 2021; Glover and Reganold 2010), as well as potentially increasing food security (Ertl *et al.* 2015; Glover *et al.* 2012; Karlsson *et al.* 2018) and sovereignty (Holt-Giménez and Altieri 2013).

Households in the study region have also employed a variety of coping mechanisms to deal with the natural dangers in order to avoid years with unfavorable weather conditions. As with adaptation practices, the preliminary list of coping mechanisms was similarly reduced during the fourth phase. Figure 3 shows the five crucial coping mechanisms that experts identified in the second round of the Delphi survey, in descending order: engaging in off-farm activities, collecting fuel wood for sale, selling assets like livestock, increasing water storage capacity, and changing farming structure.

Figure 3. Five more important coping mechanisms
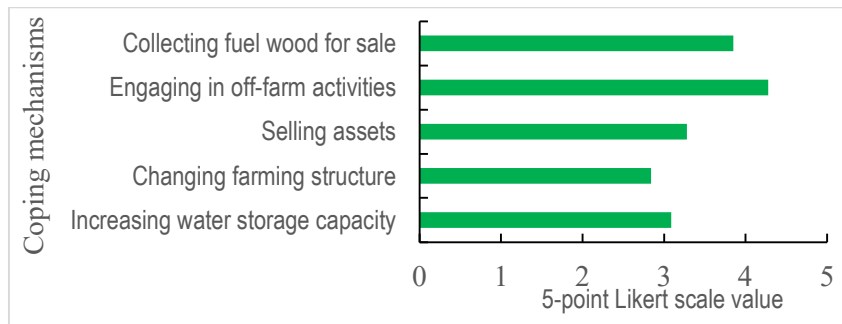
Source: The author's collected and elaborated survey data for 2023

Many reasons are cited by those who failed to adapt, including small farm holdings, financial constraints on using any of the adaptation methods, limited off-farm employment opportunities, inadequate infrastructure and technology, and a lack of information about adaptation practices (Fig. 4).

Figure 4. Five more important barriers for adaptation
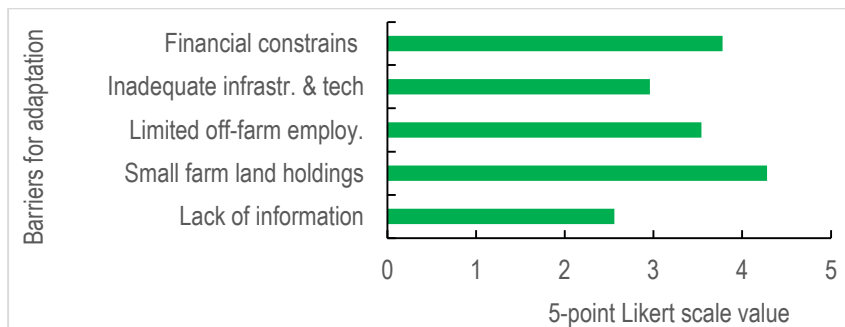
Source: The author's collected and elaborated survey data for 2023

3.2 Analysis of the Variables Affecting Households' Decision to Adapt to Climate Change

Table 1 presents the values of the estimated MNL model coefficients as well as the standard errors (in parentheses). The likelihood ratio statistics as indicated by ch2 statistics (LR chi-square = 706.57 and Pseudo-R^2 = 0.4876) are highly significant (P < 0.0001), explaining that the model has strong explanatory power. In all cases, the estimated coefficients were compared with the base category of no adaptation. Table 2 shows the marginal effects as well as the standard errors (in parentheses).

The findings revealed that the majority of the explanatory variables are statistically significant at 10% or less, as described and discussed below.

Table 1. Statistics of MNL regression model for the variables affecting farmers' decision to adapt to climate change

Independent variable	Practices of climate change adaptation				
	Improved crop varieties	Improved soil health	Efficient irrigation methods	Plant agroforestry systems	Perennial agriculture
Gender	1.432***	1.325***	1.521***	1.055**	1.052*
	(0.008)	(0.0*7)	(0.501)	(0.037)	(0.579)
Age	0.042**	0.078**	0.354***	0.035*	0.084**
	(0.011)	(0.048)	(0.078)	(0.014)	(0.048)
Education	0.192***	0.165**	0.112***	0.209**	0.209**
	(0.012)	(0.084)	(0.065)	(0.049)	(0.042)
FarmExp	1.321	0.954	0.845	0.789	1.003
	(0.052)	(0.321)	(0.213)	(0.302)	(0.634)
HouseholdSize	-0.019	-0.010	-0.015	-0.018	-0.021
	(0.006)	(0.006)	(0.006)	(0.009)	(0.006)
OffFarmEmploy	0.549***	0.489***	0.274***	0.548***	0.607***
	(0.023)	(0.078)	(0.063)	(0.153)	(0.094)
WealthStatus	0.046	0.049	0.038	0.044	0.044
	(0.047)	(0.028)	(0.014)	(0.041)	(0.017)
FarmSize	0.179***	0.186***	1.199***	1.825***	1.118***
	(0.029)	(0.026)	(0.034)	(0.869)	(0.537)
FarmToFarmExten	1.879**	1.675**	1.557***	1.689***	1.432***
	(0.644)	(0.642)	(0.408)	(0.586)	(0.085)
AccessToCredit	1.236***	1.003***	0.875***	0.901***	1.021***
	(0.703)	(0.805)	(0.522)	(0.401)	(0.004)
InfToClimChange	0.153**	0.264**	0.935***	0.166**	0.204**
	(0.632)	(0.074)	(0.607)	(0.046)	(0.016)
RainDecline	0.062***	0.058**	0.065**	0.098**	-0.077**
	(0.013)	(0.047)	(0.044)	(0.022)	(0.014)
TempIncrease	0.452***	0.509***	0.512***	0.541**	0.554**
	(0.058)	(0.157)	(0.204)	(0.019)	(0.024)
Base category	No adaptation				
N	358				
LR chi-square	706.57***				
Log likelihood	- 987.16				
Prob > chi-square	0.0001				
Pseudo-R^2	0.4876				

***, **, * = significant at 1%, 5 % and 10 % probability level of significance, respectively.

Source: The author's collected and elaborated survey data for 2023

The multinomial logit analysis results of Table 1 reveal that the gender of household heads has a significant and positive influence on all climate change adaptations. The results of Table 2 show, for instance, that gender has a significant impact on the likelihood of adopting efficient irrigation methods (male households were 12.5% more likely to adopt them) as well as plant agroforestry systems (male households were 10.9% more likely to adopt them). This demonstrates that households headed by men may be more likely than households headed by women to have access to adaptation practices and information on climate change. This result is in agreement with the study by Belay *et al.* (2017). McNamara *et al.* (1991) and Deressa *et al.* (2009) discovered the opposite result in their study.

It is worth noting that the literature on the impact of household age on adaptation is mixed. Age is not related, according to Wegayehu and Drake (2003), but it is significantly and negatively related, according to Dolisca *et al.* (2006), to households' decisions to adopt. The age of the household head in this study had a positive impact on adaptation to climate change due to his or her stock of experience. The result of marginal effects (Table 2) shows, for instance, a higher age of the head of the household was linked to a 9.8% higher probability of using efficient irrigation methods, a 4.2% higher probability of using improved crop varieties, and a 7.8% higher probability of improving the soil's health.

The results also showed that the education level of the household head had a significant influence on the choice of all adaptation practices, indicating a positive relationship between education and climate change adaptation. This indicates that farmers seem to be more prone to dealing with climate change if they have greater education. Higher educational levels are probably going to result in farmers having better information and

understanding about climate change and their choices for adapting. Dolisca *et al.* (2006) and Patnaik and Das (2017) have all reported similar findings. On average, a household with one more year of education would be 2.8% more likely to use improved crop varieties, 3.9% more likely to improve soil health, 4.6% more likely to use efficient irrigation methods, 5.2% more likely to set up plant agroforestry systems, and 2.5% more likely to practice perennial agriculture to accommodate climate change. Meanwhile, Aymone (2009) found that the level of education didn't influence the likelihood of choosing any adaptation practices.

Table 2. Statistics of marginal effects for multinomial Logit climate change adaptation model

Independent variable	Practices of climate change adaptation					
	Improved crop varieties	Improved soil health	Efficient irrigation methods	Plant agroforestry systems	Perennial agriculture	No adaptation
Gender	0.089**	0.057**	0.125***	0.109***	0.045	0.258*
	(0.018)	(0.045)	(0.007)	(0.006)	(0.168)	(0.077)
Age	0.042***	0.078***	0.098***	0.073*	0.084*	-0.005**
	(0.027)	(0.000)	(0.008)	(0.041)	(0.094)	(0.048)
Education	0.028**	0.039**	0.046**	0.052**	0.025**	0.033**
	(0.014)	(0.038)	(0.046)	(0.027)	(0.038)	(0.033)
FarmingExp	0.059**	0.044**	-0.062**	-0.078*	0.088**	0.066*
	(0.033)	(0.044)	(0.043)	(0.068)	(0.031)	(0.122)
FamilySize	0.004	0.005	0.003	0.006	0.002	0.005
	(0.002)	(0.167)	(0.108)	(0.188)	(0.166)	(0.178)
OffFarmEmploy	0.350**	0.350**	0.350***	0.350***	0.350**	0.350***
	(0.049)	(0.035)	(0.000)	(0.000)	(0.034)	(0.000)
WealthStatus	0.008	0.004	0.009	0.005	0.003	0.007
	(0.001)	(0.233)	(0.257)	(0.304)	(0.219)	(0.268)
FarmSize	0.132**	0.108**	0.122***	0.087***	0.098***	0.154***
	(0.008)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FarmerToFarmerExten	0.033*	0. 108**	0.021*	0.048***	0.018	-0.032***
	(0.010)	(0.048)	(0.087)	(0.002)	(0.270)	(0.007)
AccessToCredit	0.126***	0.088***	0.047***	0.126***	0.077***	0.111***
	(0.006)	(0.009)	(0.003)	(0.008)	(0.004)	(0.005)
InfToClimeChange	0.042**	0.135***	0.087***	0.022**	0.055**	0.057**
	(0.021)	(0.053)	(0.028)	(0.018)	(0.033)	(0.033)
RainfallDecline	0.014***	0.053***	0.091***	0.072**	-0.082**	-0.007***
	(0.08)	(0.031)	(0.035)	(0.062)	(0.049)	(0.003)
TempIncrease	0.032***	0.042***	0.055***	0.029**	0.071**	0.074**
	(0.017)	(0.022)	(0.034)	(0.011)	(0.035)	(0.061)

***. **, * = significant at 1%, 5 % and 10 % probability level of significance, respectively.

Source: The author's collected and elaborated survey data for 2023

The findings in Table 2 demonstrate that a household's farming experience has a different impact on their likelihood of adopting adaptation practices. Farming experience encourages farmers to use improved crop varieties, improve the soil's health, and practice perennial agriculture. For instance, farmers with more farming experience are more likely to improve crop varieties, improve soil health, and practice perennial agriculture, respectively, by 5.9%, 4.4%, and 8.8%. This result is consistent with earlier research by Obayelu *et al.* (2014). Meanwhile, the household's years of farming experience had a negative impact on using efficient irrigation methods (6.2%) as well as plant agroforestry systems (7.8%). This contradicts previous research findings by Sani and Chalchisa (2016).

Farm size has both negative and positive effects on adoption, according to research on agricultural technology adoption by Bradshaw *et al.* (2004). This study revealed a significant and positive relationship between farm holding size and all climate change adaptations. The likelihood of a farmer implementing crop diversification, drought-tolerant crops, soil and water management, date-changing planting, and small-scale irrigation increases with the size of their landholding. Based on marginal effects (Table 2), the chances of using improved crop varieties, improved soil health, efficient irrigation methods, plant agroforestry systems, and perennial agriculture could rise by 13.5%, 10.8%, 12.2%, 8.7%, and 9.7% for every unit increase in farm size. The size of the farm influences the decision to combine multiple climate change adaptation practices. As a result, if farmers do not have enough land, they will be unable to adapt to climate change. Sani and Chalchisa (2016) also concur with this.

All practices of climate change adaptation in this study are significantly and positively correlated with variable off-farm employment. This result shows that many resource-poor farm households can reduce their financial limitations through off-farm employment, which will encourage them to adopt climate change adaptation practices. Giannakis *et al.* (2018) came to the identical conclusion.

Farmer-to-farmer extension, which served as a proxy for social capital in this study, has a positive impact on climate change adaptation. A marginal effect analysis shows that farmers who have access to farmer-to-farmer extension services are 3.3%, 10.8%, 2.1%, 4.8%, and 1.8% more likely to use improved crop varieties, improve soil health, use efficient irrigation methods, set up plant agroforestry systems, and practice perennial agriculture than farmers who don't have access to these services.

In order for households to close their financial gap and buy the farm inputs and technologies necessary to increase agricultural production as well as engage in income-generating activities outside of farming, access to credit services is a crucial factor. This study's variable has a significant and positive impact on households' attempts to adapt to climate change. The findings of this study are comparable to those that Pattanayak *et al.* (2003) reported. When credit is readily available, it is frequently evident that farmers attempt to implement capital-intensive strategies for implementing improved agricultural technologies, such as plant agroforestry systems, efficient irrigation methods, and small-scale irrigation technologies like drip irrigation, improving the soil's health, and purchasing drought-tolerant and crop-diversification varieties.

The findings also show that the household's information about climate change has a significant and positive impact on the likelihood of adopting all types of adaptation practices. Farmers who have access to information about climate change are more likely to choose drought-tolerant cultivars and to use soil and water management as adaptation strategies to slow down or even reverse climate change. On the other hand, as a result of marginal effects, increasing climate information could increase the likelihood of improving soil health by 13.5% with information about climate change, while the likelihood of using efficient irrigation methods increases by 8.7%. Deressa *et al. (2009)* also revealed a solidly favorable relationship between information and climate change access and adaptation.

Additionally, it was discovered that variables influencing the adoption of alternative practices that could improve resilience against the effects of climate change include awareness of declining rainfall. The results of this study show that a one-millimeter decrease in rainfall decreases the likelihood of using improved crop varieties by 3.8%, improving soil health by 5.3%, using efficient irrigation methods by 9.1%, using plant agroforestry systems by 7.2%, and doing perennial agriculture by 8.2%.

As shown in Table 2, a 1 degree rise above the average annual temperature on the household's farm makes it 3.2% more likely that they will use improved crop varieties, 4.2% more likely that they will improve the health of the soil, 5.5% more likely that they will use efficient irrigation methods, 2.9% more likely that they will plant agroforestry systems, and 7.1% more likely that they will practice perennial agriculture. Other empirical research, for example, by Ureta *et al.* (2020), shows that a slight increase in temperature negatively affects important cereal crops like maize and wheat.

Conclusions

This study evaluated by two empirical analyses conducted using the methodology described in the present article how smallholder farmers in Prespa Park coped with short-term climate changes, how they adapted for future climate change, and identified the main barriers impeding smallholder farmers from successfully using coping and adaptation practices. Additionally, a multinomial logistic regression model was employed to analyze the factors influencing smallholder farmers' choice of adaptation practices to climate change.

The typology of climate change adaptation strategies and coping mechanisms employed by Prespa Park region farmers at the household level was established in the first empirical investigation. Findings showed that future policies that assist in addressing the issues of improving soil health, planting drought-tolerant and early-maturing food crop varieties, utilizing tried-and-true methods of conserving water in agriculture (such as controlled deficit irrigation and drip irrigation systems), and enhancing the resilience of agroecosystems, as well as agroforestry and perennial plantations, which align with the most significant adaptation practices adopted by households, can assist households, local governments, or any other concerned body in addressing these issues of both current and future climate changes by giving them more attention.

The empirical investigation also revealed several significant coping mechanisms used in the research area's households. They entail selling animals and other assets, engaging in off-farm activities, gathering fuel wood for sale, increasing the capacity of the soil to store water, and changing farming structures. The empirical investigation also identified the main barriers to the adoption of coping strategies and behaviors for adapting to

climate change. Small farm holdings, financial restrictions on utilizing any of the adaptation strategies, a lack of off-farm work options, poor infrastructure and technology, and a lack of knowledge about adaptation practices were some of the barriers.

The following variables were identified and evaluated in the second empirical analysis, which was carried out using a multinomial logit model: gender, education, off-farm employment, farm size, farming experience, farmer-to-farmer extension, access to credit, information about climate change, awareness of declining rainfall, and recognition of temperature increases. These variables have the potential to influence households' decisions to use a particular practice of climate change adaptation that climate change planners should focus on. Consequently, strengthening adaptations at the farm level will come from creating policies and practices that improve these variables.

The results of the current study are expected to be useful in guiding local government agencies and policymakers and helping to build sustainable adaptation strategies to climate change at the household level in Prespa Park and other areas with similar conditions.

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Declaration of Competing Interest

The author declares that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Analysis of Sea and River Water Quality Standards Due to Operations and Domestic Activities in the Sanur Port Area, Bali

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Abstract: The development of an area has impacts, both positive and negative impacts. The positive impact is in the form of regional economic growth, employment and development of the surrounding regions. The negative impact is the disruption of the environmental ecosystem and a decrease in environmental quality due to waste generated from development operations, in the form of solid waste (garbage) and liquid waste. The increasing pollution load is also caused by public awareness and business activities in upstream areas that do not manage waste properly, which ultimately leads to all of the waste accumulating in water bodies and causing changes in water quality standards. Sanur Port, which is one of the development centers in its operations, is very vulnerable to environmental pollution impacts. The pollution mechanism originates from activities around Sanur Port and domestic activities which are discharged into rivers and seas in the Sanur area. This research aims to analyze the quality of river water and sea water caused by activities around Sanur Port and community activities based on Decree of the Minister of Environment Number 51 of 2004 and determine the pollution index. Water quality standards use Bali Governor Regulation no. 16 of 2016 concerning Environmental Quality Standards and Quality Standard Criteria for Environmental Damage. This research uses a quantitative approach by collecting primary data from direct observations in the field and secondary data based on previous research reports and government reports. The research results show that TDS in the rainy season tends to be lower than in the dry season, both in the results of testing samples of Abianbase river water, the results of testing samples of sea water in front of the Mak Beng Restaurant and sea water samples in the Sanur Port Pool. In front of Mak Beng, ammonia levels during the rainy season are higher than during the dry season. Ammonia levels in the Abianbase River and sea water in front of Sanur port are lower during the rainy season compared to the dry season. The presence of Coliform bacteria and E. coli shows a tendency to decrease during the rainy season. This decrease is thought to be caused by leaching by rainwater entering marine waters and retailing and changes in ocean currents during the rainy season.

Keyword: pollution; waste; quality; water; environment.

JEL Classification: Q01; Q5; Q56; R11.

Introduction

Although ports have an economic impact, they also have a negative impact on the environment. The port industry is one of the fastest growing sectors that causes environmental pollution. Some specifications such as labor intensity, contribution to economic growth, connections, and relationships with cities result in different levels of social and economic sustainability compared to other industries. Ports are economic engines and trade gateways due to their unique position in the shipping supply chain between different modes of transportation. There are many stops at ports along inter-island ships' journeys which can have an impact on the economy and tourism on the island of Bali. One of the ports built in the Sanur area of Denpasar City, Bali is Sanur Port. Sanur Port is influenced by demands for supporting facilities for the main tourism activities and ferry activities. The distribution pattern of tourism facilities on Sanur Beach forms a linear pattern towards the footpath, with land use density towards the south of the Sanur Beach area (Sylvan *et al.* 2015). So far, Sanur Port operations have increased the pollution load due to the impact of human activities and domestic community activities (Sudipa et al, 2020). Sanur Port operations also have an impact due to waste generation which requires sustainable management (Armadi *et al.* 2020). Sanur Port operations have put pressure on the physical environment, especially water quality and other domestic activities. Therefore, establishing policies that consider equity, efficiency and sustainability is the main target for decision makers in port environmental management (Nikoo *et al.* 2013). Furthermore (Lassard *et al.* 2013) explained that human activities greatly influence water quality and water quantity. Reservoir water quality is greatly influenced by the topography and patterns of spatial use and use of an area. Uncontrolled discharge of domestic and agricultural wastewater will affect the quality of sea water and river water (Tang et al, 2012). Increased domestic activities and tourism have an impact on the environment, especially on water quality. Various activities at Sanur Port, tourism and domestic activities can reduce the quality of the environment around Sanur Port (Dian *et al.* 2020).

The decline in water quality is not only caused by industrial waste, but also caused by household waste, both liquid waste and solid waste. The decline in water quality is caused by pollution from household waste and industrial waste which does not comply with the rules for proper waste disposal and processing regarding the conditions of the surrounding environment, thus having an impact on the condition of river water and ground water (Supardiono *et al.* 2021). The life of aquatic organisms is closely related to water quality both physically and chemically, as well as biologically. Water quality parameters are influenced by land use and the intensity of human activities in the surrounding area. (Nida *et al.* 2023). Waste resulting from socio-economic processes must be carefully monitored by the government because cultivation activities can reduce water quality (Ozdemir *et al.* 2014). Sea and river water pollution around Sanur Port originates from several activities, including: residents, agriculture and livestock. Potential pollutants that can pollute reservoirs are in the form of solids and/or liquids (Brahmana *et al.* 2010). This research aims to analyze the status of water quality due to water pollution. The research method uses a quantitative approach by taking sea and river water samples to determine the physical, chemical and biological parameters of water using purposive sampling which is differentiated based on distance. The research was conducted in September 2023 – February 2024.

1. Literature Review

1.1 Sanur Port

The main port as a port with the main function of serving domestic and international sea transportation activities, transshipment of domestic and international sea transportation in large quantities as well as ferry transportation with service coverage between provinces. A collecting port is a port with the main function of serving domestic sea transportation activities, transshipment of medium volume domestic and international sea transportation as well as ferry transportation with service coverage between provinces. Meanwhile, feeder ports are ports whose main function is to serve domestic sea transportation activities, transshipment of limited sea transportation, and are feeders for main ports and collecting ports as well as ferry transportation with service coverage within the province (Yolanda, 2023).

Considerations for choosing a location in the Matahari Terbit Beach area in Sanur are based on considerations of the spatial zoning of Denpasar City, the absence of distribution of live coral in the sea area. According to Logan *et al.* (2023), sediment in the Sanur area moves parallel to the coastline from north to south to Matahari Terbit Beach and sediment moves parallel to the coastline from south to north to Sanur Beach. Because there was no significant erosion, it was concluded that the construction of Sanur Port did not affect tourism activities in the Sanur area.

1.1 Water Pollution

The decline in water quality is not only caused by industrial waste, but also caused by household waste, both liquid waste and solid waste. Cases of decreasing water quality have occurred in several regions of Indonesia. The decline in water quality is caused by pollution from household waste and industrial waste which does not comply with the rules for proper waste disposal and processing regarding the conditions of the surrounding environment, thus having an impact on the condition of residents' well water, river water and ground water (Puspa *et al.* 2023).

The life of aquatic organisms is closely related to water quality both physically and chemically, as well as biologically. Water quality parameters are influenced by land use and the intensity of human activities in the surrounding area. (Yolanda *et al.* 2023). Various community activities around rivers and seas have not only caused environmental damage in the form of changes in landforms, landscapes and conservation areas, it is even suspected that the impact of pollution on the environment is caused by uncontrolled disposal of waste or rubbish. As a result of the activities carried out by the community, of course, this causes additional material to be added to the river. Adding material to the waters will affect the conditions of the waters both biologically, physically and chemically. Changes in water content are determined by the content of chemical compounds and materials that enter a body of water and are an important factor in studying the development of aquatic communities (Fernandez *et al.* 2023).

Currently, humans lack environmental awareness, many of them do not understand environmental cleanliness, so they easily create household waste, both liquid and solid, in the form of rubbish which is very dangerous for the environment. Just like the daily activities that we do, such as bathing, washing and various other activities that we consider trivial but which produce residual waste can actually be harmful to humans and the environment, especially the marine environment. Of the many human activities, it turns out that the most dangerous is household waste. Even though we don't live in a coastal area and a lot of untreated industrial waste can also harm marine waters, look at the large number of Indonesians with untreated household waste that is produced every day. It can be said that the damage caused by household waste is greater than industrial waste (Razi *et al.* 2023).

The construction and operation of Sanur Port has had an impact on pollution of the waters around Sanur Port, both from solid waste and liquid waste. The water quality status needs to be re-examined to see whether it shows a polluted condition or a good condition by comparing the water quality standards set to prevent water pollution due to the introduction of living creatures, substances, energy and/or other components into the water by human activities, so that the water quality drops to a certain level that causes water to not function according to its intended purpose (Yulianto *et al.* 2023). Land use at Sanur Beach is influenced by demands for supporting facilities for the main tourism activities and crossing activities. The distribution pattern of tourism facilities on Sanur Beach forms a linear pattern towards the footpath, with land use density towards the south of the Sanur Beach area (Safira *et al.* 2023).

Sanur Port and the surrounding area have complex conditions in terms of utilization, namely use for tourism, use for the economy, and use for religious rituals including socio-cultural interactions within it which can cause conflict and pressure on the physical environment. The cases that occurred at similar ports were not as complex as those at Sanur Port, especially the interaction of tourism and socio-culture in religious spaces such as at Sanur Port.

1.3 Environmental Management

Environmental management is a very important thing to do, considering that humans always try to maximize the realization of all their desires and often in the fastest way possible, so they tend to sacrifice the interests of their environment. Sustainable environmental management will influence the availability of water resources, food and energy security to support the achievement of sustainable development goals (SDGs). Environmentally friendly agriculture, efficient use of water and efficient use of energy will ensure environmental sustainability (Muninggar *et al.* 2023).

Good environmental management can be realized if the raw materials supporting production use environmentally friendly materials that can be quickly degraded by the environment and production development is able to reduce environmental pollution. The community has relevant power in environmental management. Community forces cause environmental changes which include four things, namely changes in science and technology, changes in government policies, changes in markets and the economy, and changes in public behavior (Juliansyah 2023).

Environmental management needs serious attention because it is a sensitive global issue that has the potential to cause negative impacts. To see environmental management performance, this can be done through evaluating environmental management performance which consists of implementing environmental impact analysis, controlling water pollution, controlling air pollution and greenhouse gas emissions, controlling solid waste, and managing liquid waste (Ahmad *et al.* 2022). Community participation is something that is absolute in the framework of creating a healthy living environment. There is a misunderstanding regarding community participation in environmental issues. Every human being, either directly or indirectly, is responsible for the sustainability of the environment (Rijulvita *et al.* 2023).

2. Research Methodology

The quality of sea water and river water after the operation of Sanur Port has a close relationship with various activities around the port, such as business activities that have the potential to produce solid and liquid waste and the disposal of domestic, agricultural and industrial liquid waste. Which is upstream of Sanur Port. The research design used by researchers is to conduct an analysis of environmental pollution and damage, analyzing the level of pollution and damage to the aquatic environment around Sanur Port based on the quality standards regulated in Bali Governor Regulation No. 16 of 2016 concerning Environmental Quality Standards and Quality Standard Criteria for Environmental Damage as presented in Figure 1.

Figure 1. Framework of Thought

```
┌─────────────────────────────────────────────┐
│      Port Operations and Domestic Activities  │
└─────────────────────────────────────────────┘
        ┌──────────────┐      ┌──────────────┐
        │ Solid Waste  │      │ Liquid Waste │
        └──────────────┘      └──────────────┘
        ┌─────────────────────────────────────┐
        │     Sea and Rivers in the Sanur Region │
        └─────────────────────────────────────┘
┌──────────────────────┐   ┌─────────────────────────┐
│ Regulation of the    │   │ Sea and River Water Quality │
│ Governor of Bali     │──▶│                         │
│ No. 16 of 2016       │   │                         │
└──────────────────────┘   └─────────────────────────┘
┌──────────────────────┐   ┌─────────────────────────┐
│ Decree of the State  │   │ Pollution Index          │
│ Minister for the     │──▶│ Sea and River Water in   │
│ Environment Number   │   │ the Sanur Region         │
│ 51 of 2004           │   │                         │
└──────────────────────┘   └─────────────────────────┘
```
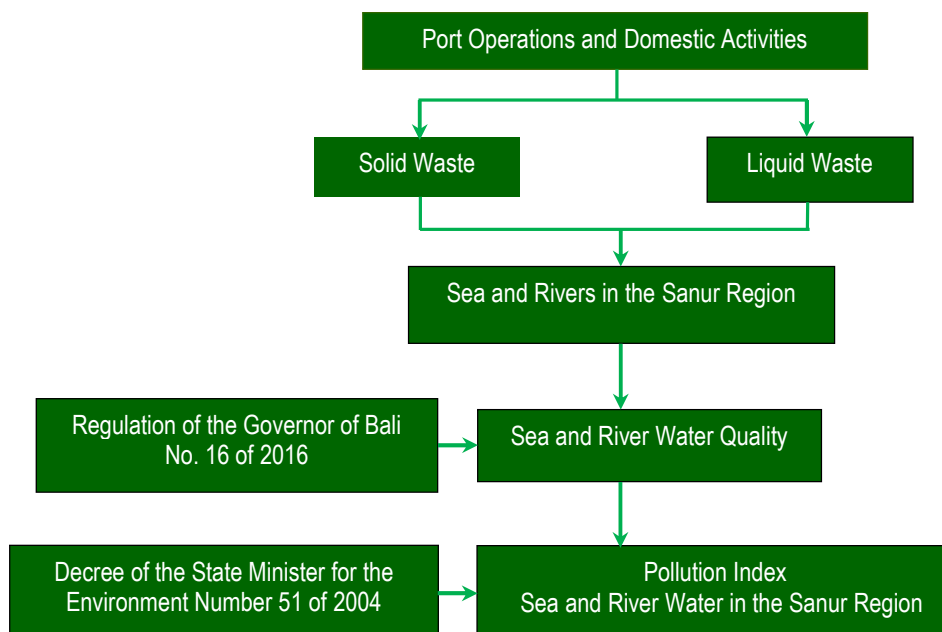
Determination of pollution status is determined using the pollution index as stated in the Decree of the Minister of Environment Number 51 of 2004 as follows:

$$PIj = \sqrt{\frac{(\frac{Ci}{Lij})^2_M + (\frac{Ci}{Lij})^2_R}{2}}$$

Information:
Li   : Water quality concentration for water quality standards for water use (j)
Ci   : Water quality concentration from survey results
Pij   : Pollution index for designation (j)
(Ci/ Lij)M: Ci/Lij Maximum
(Ci/ Lij)R : Ci/Lij Average
 The status of water quality standards is stated as follows:
1. 0≤PIj≤1.0: According to quality standards (good condition)
2. 1.0<PIj<5.0: Lightly polluted water
3. 5.0<PIj≤10: Moderately polluted water
4. PIj>10: Heavily polluted

3. Research Result

3.1 Existing Conditions of Sea and River Water Quality Standards in the Sanur Region

To determine the existing condition of Sanur Port water quality, this is done by comparing the results of analysis of physical, chemical, and microbiological parameters of water quality from samples taken at several river and reservoir water sampling points with the applicable water quality criteria, namely referring to Bali Governor Regulation No. 16 of 2016 concerning Environmental Quality Standards and Quality Standard Criteria for Environmental Damage. Sampling and laboratory analysis of water quality taken in the dry season, namely in October 2023 and in the rain season, namely February 2024, based on these regulations in this research as a comparison, Class I, II, III, or IV Water Quality Criteria are used as standards. River water quality and sea water quality standards use a standard approach for port use, tourism and maritime, and marine biota. The river water quality parameters can be seen in Table 1 and the sea water quality parameters for ports, tourism and maritime use, and marine biota can be seen in Table 2.

Table 1. River Water Quality Analysis Parameters

No	Parameters	Unit	Bali Governor Regulation No. 16 of 2016			
			Class 1	Class 2	Class 3	Class 4
A.	**Physics**					
1	Temperature	^{0}C	Deviation 3	Deviation 3	Deviation 3	Deviation 5
2	TDS	ppm	1000	1000	1000	2000
B.	**Chemistry**					
1	pH	ppm	6 - 9	6 - 9	6 - 9	5 - 9
2	Ba	ppm	1	(-)	(-)	(-)
3	Fe	ppm	0,3	(-)	(-)	(-)
4	Mn	ppm	0,1	(-)	(-)	(-)
5	Cu	ppm	0,02	0,02	0,02	0,02
6	Zn	ppm	0,05	0,05	0,05	2
7	Cr	ppm	0,05	0,05	0,05	1
8	Cd	ppm	0,01	0,01	0,01	0,01
9	Hg	ppm	0,001	0,002	0,002	0,005
10	Pb	ppm	0,03	0,03	0,03	1
11	As	ppm	0,05	1	1	1
12	Se	ppm	0,01	0,05	0,05	0,05
13	Ammonia (NH_3-N)	ppm	0,5	(-)	(-)	(-)
14	Nitrat (NO_3-N)	ppm	10	10	20	20
15	Nitrit (NO_2-N)	ppm	0,06	0,06	0,06	(-)
16	Detergent	ppm	0,2	0,2	1	5
C.	**Microbiology**					
1	Total coliform	MPN/100ml	1000	5000	10000	10000
2	Faecal coliform	MPN/100ml	100	1000	2000	2000

Source: Bali Governor Regulation No. 16 of 2016

Table 2. Sea Water Quality Analysis

No	Parameters	Unit	Result	Tourism & Recreation Quality Standard	Marine Biota Quality Standard
A.	**Physics**				
1	Temperature	^{0}C	27,00	26-30	Nature Coral ≥20 Mangrove ≥80 Seagrass ≥20
2	Smell		Odorless	Nature 3	Nature 3

No	Parameters	Unit	Result	Tourism & Recreation Quality Standard	Marine Biota Quality Standard
3	Turbidity	ppm SiO2	**7,84**	<0,01	<5
4	TDS	ppm	**25.002**	≤ 20	Coral ≥20 Mangrove ≥80 Seagrass ≥20
B.	**Chemistry**				
1	pH		7,84	6-8,5	7-8,5
2	Cu	ppm	<0,0153	0,008	0,008
3	Zn	ppm	<0,0075	0,002	0,05
4	Cr	ppm	<0,003	0,00004	0,005
5	Cd	ppm	<0,001	0,00002	0,001
6	Hg	ppm	<0,0005	≤ 0,0001	0,001
7	Pb	ppm	<0,0036	0,00002	0,008
8	As	ppm	<0,0003	0,0026	0,012
9	Se	ppm	<0,0006	0,00045	-
10	Ammoni (NH_3-N)	ppm	**0,091**	Nil	0,3
11	Nitrit (NO_2-N)	ppm	0,001	Nil	-
12	Detergent	ppm	<0,05	Nil	-
C.	**Microbiology**				
1	Total coliform	MPN/100ml	**9200**	1000	1000
2	Faecal coliform	MPN/100ml	**3500**	200	-

Source: Bali Governor Regulation No. 16 of 2016

The water samples taken were as follows:
1. Sea water sample in front of Mak Beng Restaurant;
2. Sea water samples in front of Sanur Port;
3. Sea water samples in the Sanur Port pool; And
4. Abianbase River water sample.

4. Discussion

The results of the quality test for physical, chemical, and microbiological parameters of water samples taken during the dry season are as follows:

4.1 Sea Water Sample in Front of Mak Beng Restaurant

From the results of the pollution index calculation, it shows that the quality of sea water in front of Mak Beng Restaurant is as follows:

• Designation of Tourism and Recreation quality standards with a pollution index value of 12.07, where the water is heavily polluted.

• Water allocation for marine biota with a pollution index value of 6.76, where the water is in a moderately polluted condition.

From the results of the pollution index analysis above, it shows that the designation of tourism and recreation water quality standards is influenced by physical parameters, namely turbidity and dissolved residue (TDS), chemical parameters, namely free ammonia (NH_3-N), and biological parameters, namely total coliforms and faecal coliforms.

4.2 Sea Water Samples in Front of Sanur Port

From the results of the pollution index calculation, it shows that the quality of sea water in front of Sanur Port is as follows:

• Destination of Tourism and Recreation quality standards with a pollution index value of 1.34, where the water is lightly polluted.

• Water allocation for marine biota with a pollution index value of 0.5, where the water is in good condition and meets quality standards for marine biota life.

From the results of the pollution index analysis above, it shows that the designation of tourism and recreation water quality standards is influenced by physical parameters, namely turbidity and dissolved residue (TDS), chemical parameters, namely free ammonia (NH_3-N), and biological parameters, namely total coliforms and faecal coliforms.

4.3 Sea Water Samples in the Sanur Port Pool

From the results of the pollution index calculation, it shows that the water quality of Sanur Port is 35.84, where the water in it is very bad or in a heavily polluted condition. From the results of the pollution index analysis above, it shows that the designation of port water quality standards is influenced by physical parameters, namely dissolved residue (TDS) and biological parameters, namely total coliforms and faecal coliforms.

4.4 Abianbase River Water Sample

From the results of the pollution index calculation, it shows that the water quality of the Abian Base River is as follows:

- Class I water designation with a pollution index value of 1.65, where the water is lightly polluted.
- Class II water designation with a pollution index value of 0.29, where the water is in good condition and meets quality standards.
- Class III water designation with a pollution index value of 0.20, where the water is in good condition and meets quality standards.
- Class IV water designation with a pollution index value of 0.13, where the water is in good condition and meets quality standards.

From the results of the pollution index analysis above, it shows that the designation of class I, II, III and IV water quality standards is influenced by biological parameters, namely total coliforms and faecal coliforms. From the results of the pollution index calculation above, several parameters that influence the water quality standards and pollution index in sea water in front of the Mak Beng Restaurant, sea water in front of Sanur Port, sea water in the Sanur Port pool, and Abianbase River water are explained as follows:

4.4.1 Dissolved Solids (TDS)

The parameter that influences water quality and pollution index is TDS. TDS is above the sea water quality standard limit, which can be seen in the results of testing sea water samples in front of the Mak Beng Restaurant and sea water samples in the Sanur Port Pool for use as quality standards for marine tourism and marine biota. Total dissolved solids (TDS) is quite high in the results of testing seawater samples in front of the Mak Beng Restaurant because of the run off of organic waste originating from activities in land areas that enter the water (Rinawati *et al.* 2016). The condition of the waters in front of the Mak Beng Restaurant is due to the presence of a fairly large water channel which flows quite rapidly carrying organic waste originating from domestic activities which causes organic and inorganic particles to flow into the waters (Wibowo *et al.* 2020). Almost the same condition occurs in sea water in the Sanur Weathering Pool, which is caused by the mouth of the Abianbase River entering the port pool and becoming trapped in the port pool. The results of the analysis of dissolved solids (TDS) parameters are presented in Figure 2.

Figure 2 Results of Dissolved Solids (TDS) Parameter Analysis
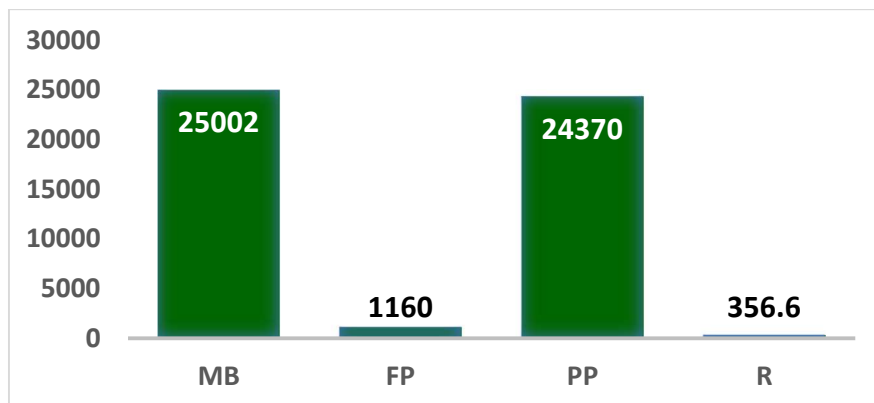
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

4.4.2 Ammonia (NH$_3$)

Ammonia levels in sea waters on Sanur beach and its surroundings are caused by activities in upstream areas such as agriculture, accommodation and settlements which continuously enter the waters, accumulate and can become pollutants that disrupt the life of microorganisms in coastal waters (Putri *et al.* 2019). The highest nitrite concentration is found in the Abianbase River. Rivers and waterways are suppliers of ammonia into marine waters. This is because this area is densely packed with tourism, accommodation, restaurants and trade activities which are very close to the beach, causing organic waste, rubbish, human and animal waste to more easily enter the waters Widyastuti *et al.* (2015). The ammonia value is also related to the concentration of organic matter in a body of water (Hasibuan *et al.* 2017). This condition will increase pressure on the coastal environment. The results of the ammonia parameter analysis can be seen in Figure 3.

Figure 3. Results of Ammonia Parameter Analysis (NH$_3$)
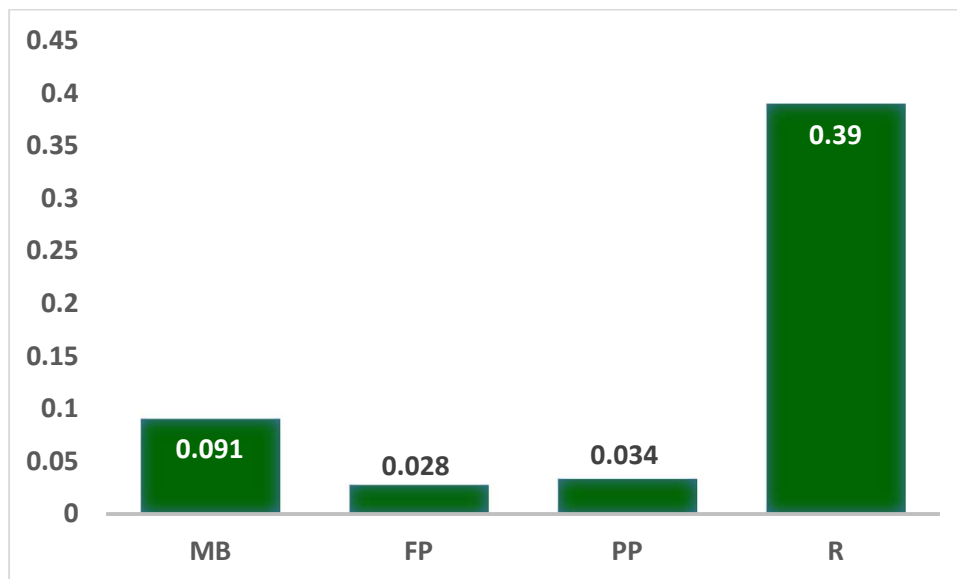
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

4.4.3 Coliform and E-Coli

Under normal circumstances Coliforms and Escherichia Coli can grow in the digestive tract but can be pathogenic and can attack animals and humans in certain circumstances such as digestive disorders and immunosuppression in the host. Poor sanitation from livestock management results in Escherichia coli contamination, which is an environmental contaminant bacterium, namely environmental contamination bacteria (Mundi 2018).

The presence of Coliform and E-Coli contamination bacteria can be thought to be caused by community activities that use spring water as a place to bathe and wash (Alam *et al.* 2016). Low community hygiene allows bacterial contamination. The existence of springs or rivers in city areas also allows many farms to enter the river or waterways which eventually enter sea waters and the possibility of poor sanitation which can increase feces deposits which can pollute river water. The highest e-coli parameters were in the Sanur Port pool, which was possibly caused by the accumulation of human waste material entering through the Abianbase River into the harbor pond which had an impact on the environmental health of Sanur Port causing the accumulation of pathogenic bacteria (Setiawan, 2013). The results of the analysis of coliform and e-coli parameters can be seen in figures 4 and 5.

Figure 4. Coliform Parameter Analysis Results
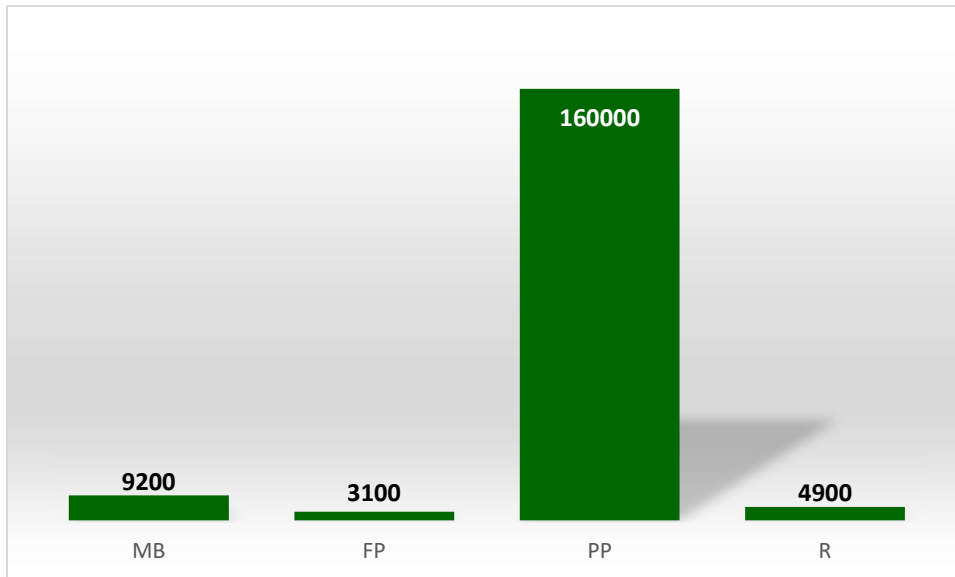
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

Figure 5. E. Coli Parameter Analysis Results
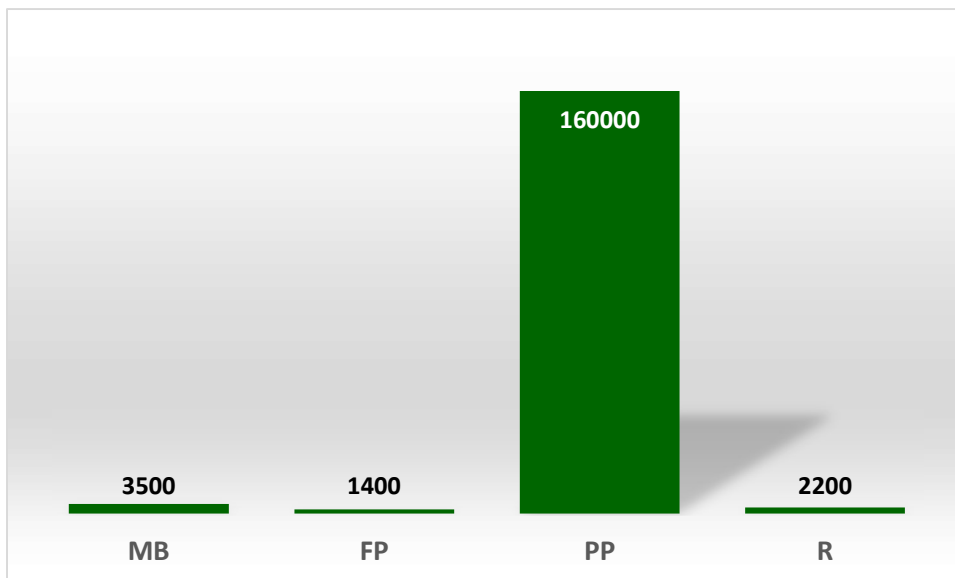
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

The results of the quality test for physical, chemical, and microbiological parameters of water samples taken during the rainy season are as follows:

4.5 Sea Water Sample in front of Mak Beng Restaurant

From the results of the pollution index calculation, it shows that the quality of sea water in front of Mak Beng Restaurant is as follows:

• Designation of Tourism and Recreation quality standards with a pollution index value of 10.7, where the water is heavily polluted.

• Water allocation for marine biota with a pollution index value of 5.9, where the water is in a moderately polluted condition.

From the results of the pollution index analysis above, it shows that the designation of tourism and recreation water quality standards is influenced by physical parameters, namely turbidity and dissolved residue (TDS), chemical parameters, namely free ammonia (NH3-N), and biological parameters, namely total coliforms and faecal coliforms.

4.6 Sea Water Samples in front of Sanur Port

From the results of the pollution index calculation, it shows that the quality of sea water in front of the Mk Beng Restaurant is as follows:

• Destination of Tourism and Recreation quality standards with a pollution index value of 0.84, where the water is in good condition and meets the quality standards for tourism and recreation.

• Water allocation for marine biota with a pollution index value of 0.38, where the water is in good condition and meets quality standards for marine biota life.

From the results of the pollution index analysis above, it shows that the designation of tourism and recreation water quality standards is influenced by physical parameters, namely turbidity and dissolved residue (TDS), chemical parameters, namely free ammonia (NH_3-N), and biological parameters, namely total coliforms and faecal coliforms.

4.7 Sea Water Samples in the Sanur Port Pool

From the results of the pollution index calculation, it shows that the water quality of Sanur Port is 21.64, where the water in it is very bad or in a heavily polluted condition. From the results of the pollution index analysis above, it shows that the designation of port water quality standards is influenced by physical parameters, namely dissolved residue (TDS) and microbiological parameters, namely Faecal Coloform.

4.8 Abianbase River Water Sample

From the results of the pollution index calculation, it shows that the water quality of the Abian Base River is as follows:

• Class I water designation with a pollution index value of 12.61, where the water is heavily polluted.

• Class II water designation with a pollution index value of 2.52, where the water is lightly polluted.

• Class III water designation with a pollution index value of 1.85, where the water is lightly polluted.

• Class IV water designation with a pollution index value of 0.54, where the water is in good condition and meets quality standards.

From the results of the pollution index analysis above, it shows that the designation of class I, II, III and IV water quality standards is influenced by biological parameters, namely total coliforms and faecal coliforms.

From the results of the pollution index calculation above, several parameters influence the water quality standards and pollution index in sea water in front of Maman Mak Beng's house, sea water in front of Sanur Port, sea water in the Sanur Port pool, and Abianbase River water both taken at during the dry season and the rainy season can be explained as follows:

4.8.1   Dissolved Solids (TDS)

The parameter that influences water quality and pollution index is TDS. When compared between the dry season and the rainy season, TDS in the rainy season tends to be lower than in the dry season, both in the results of testing Abianbase river water samples, the results of testing sea water samples in front of the Mak Beng Restaurant and sea water samples in the Sanur Port Pool. for the determination of quality standards for marine tourism and marine biota. The decrease in TDS parameters during the rainy season is probably caused by the intake of rainwater entering the waters and the retail process occurring continuously during the rainy season. A comparison of the results of analysis of dissolved solids (TDS) parameters taken during the dry season and rainy season is presented in Figure 6.

Figure 6. Results of Dissolved Solids (TDS) Parameter Analysis
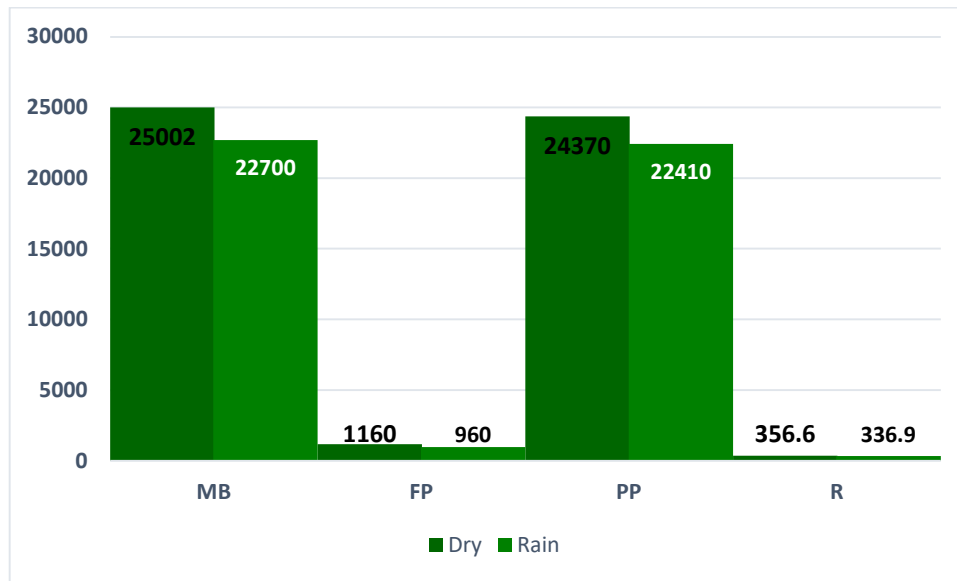
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

4.8.2   Ammonia (NH$_3$)

Based on the results of the analysis of the Ammonia parameter (NH$_3$), the ammonia levels taken during the dry season and rainy season have different conditions. In front of Mak Beng, the ammonia level during the rainy season is higher than during the dry season, possibly due to waste from domestic activities flowing from the water channel in front of the beach which distributes ammonia from land which runs off during the rainy season and the same condition also occurs in the harbor pool water. Different water conditions can be seen in the Abianbase River and the sea water in front of Sanur Port which is lower during the rainy season compared to the dry season. This condition is caused by water runoff that enters the Abianbase River during the rainy season, which causes quite a lot of water to fall due to dilution and this condition also occurs in sea water in front of Sanur Port. A comparison of the results of ammonia parameter analysis during the dry season and rainy season can be seen in Figure 7.

Figure 7. Results of Ammonia Parameter Analysis (NH$_3$)
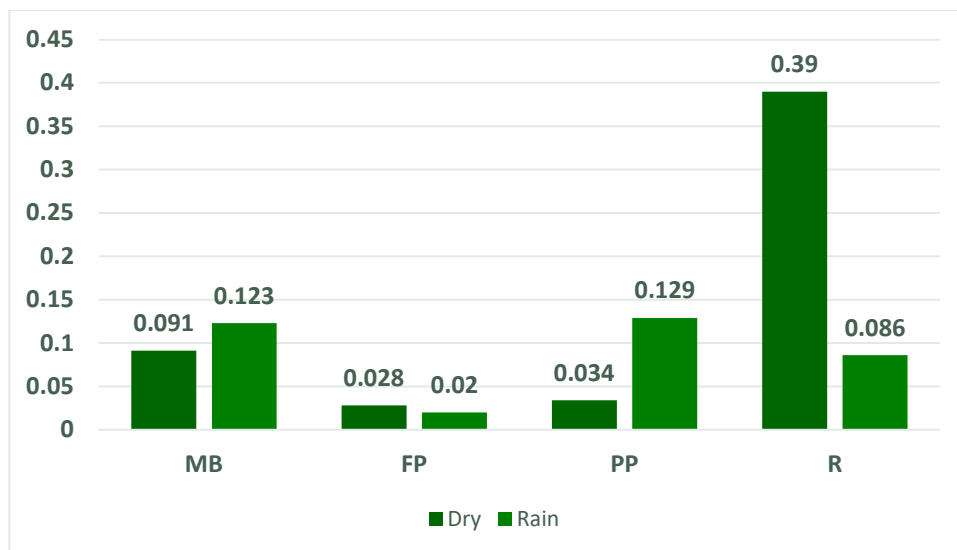
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

4.8.3   Coliform and E-Coli

The presence of Coliform and E-Coli bacteria shows a tendency to decrease during the rainy season. This decrease is caused by leaching by rainwater that enters sea waters and retailing and changes in sea currents during the rainy season, including in the Sanur Port pool, there is a decrease caused by the entry of rainwater from the Abianbase River and from the Sanur Port environment so that there is sufficient retailing. High levels cause the harbor pool water to come out and be replaced with water from rainwater runoff and Abianbase River water. The increase in coliform and e-coli parameters in the Abianbase River is caused by the accumulation of organic material and waste from land areas in the Abianbase River. A comparison of the results of the analysis of coliform and e-coli parameters during the dry season and rainy season can be seen in figures 8 and 9.

Figure 8. Coliform Parameter Analysis Results
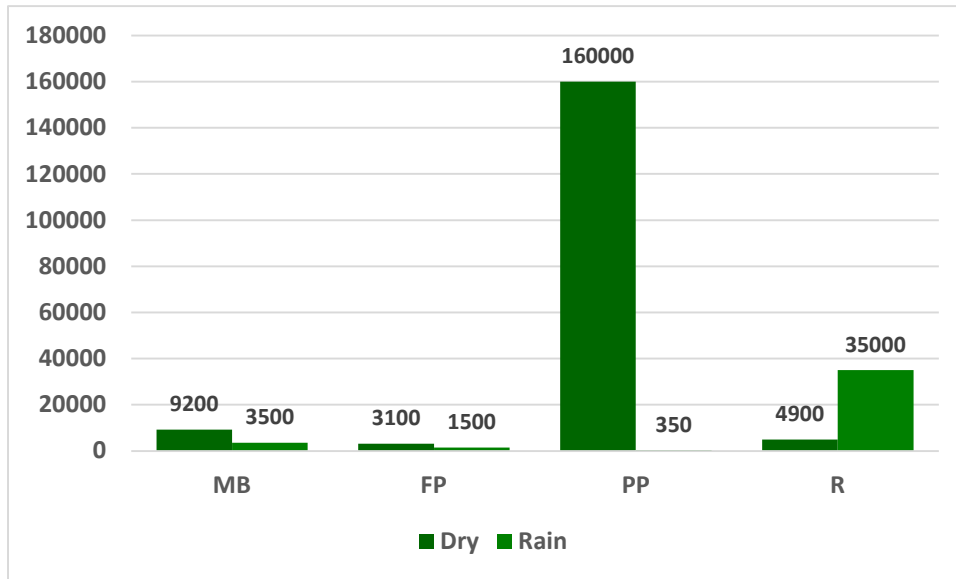
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

Figure 9. E. Coli Parameter Analysis Results
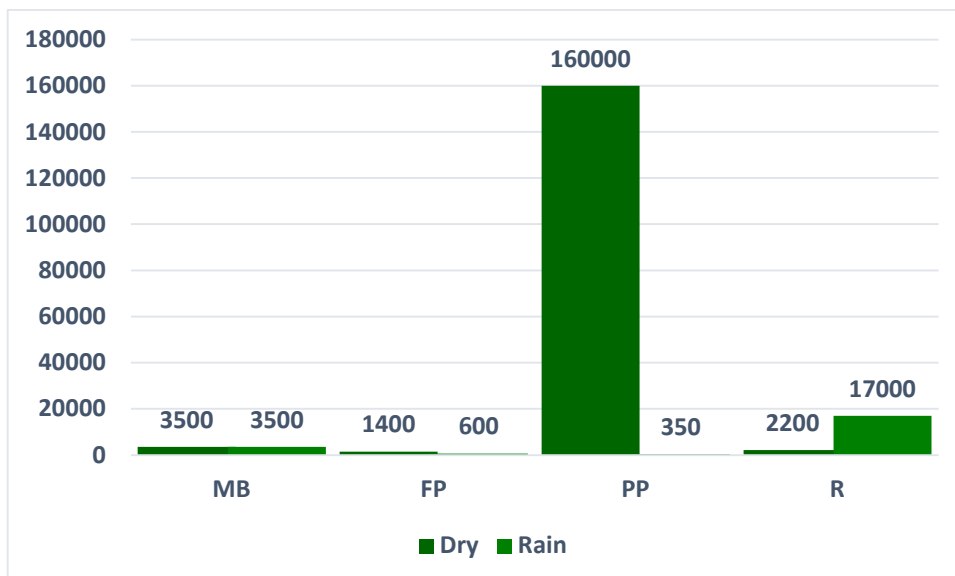
MB: Mak Beng Restaurant, PF: Port Front, PP: Port Pool, R: River
Source: Analysis Result

Conclusion and Further Research Coliform

TDS in the rainy season tends to be lower than in the dry season, both in the results of testing samples of Abianbase river water, the results of testing samples of sea water in front of the Mak Beng Restaurant and sea

water samples in the Sanur Port Pool. Ammonia levels taken during the dry season and rainy season have different conditions. In front of Mak Beng, ammonia levels during the rainy season are higher than during the dry season. Ammonia levels in the Abianbase River and sea water in front of Sanur Port are lower during the rainy season compared to the dry season. The presence of Coliform bacteria and E. coli shows a tendency to decrease during the rainy season. This decrease is caused by washing by rainwater that enters marine waters and retailing and changes in ocean currents during the rainy season. Serious efforts are needed to overcome the impact of pollution entering river and sea waters in the Sanur Port area by implementing a comprehensive environmental management approach from upstream to downstream. It is very important to carry out further research to mitigate the impacts resulting from Sanur Port operations and their impact on Sanur tourism. The novelty of this research is the accumulation of waste entering Sanur Port and Sanur Beach, both from domestic waste and waste originating from Sanur Port activities, which is reviewed thoroughly and is an important part of a complex tourism area. The importance of this research is to determine the pollution conditions that occur during the operation of Sanur Port, which intersects with one of the tourism centers in Bali, and to mitigate and improve environmental conditions in the future.

Credit Authorship Contribution Statement

I Gede Cipta Sudewa Atmaja: Creating research concepts and ideas, conducting field data excavation, formulating research methodology, collecting data, validating data, writing drafts, conducting analysis and funding
Made Sudiana Mahendra: Formulate research concepts and ideas, make writing corrections, review data and writing, control data analysis and writing.
I Wayan Nuarsa: pay close attention to data analysis and writing, assist in data validation, review and edit data and writing.
I Gusti Bagus Sila Darma: Assisted in data curation, reviewing writing, validating field data, formulating writing and visualization procedures.
Nyoman Sudipa: assisting in extracting field data, compiling writing using software, supervising sampling in the field, editing, assisting in drafting and administration.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Managing Urban Environment: Assessing the Role of Planning and Governance in Controlling Urbanization in the City of Amman, Jordan

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Abstract: The aim of this paper is to explore gaps in the spatial planning and governance systems that affect the ability of local authorities to manage urbanization in Amman, the capital of Jordan. A qualitative method using in-depth interviews with top managers was adopted to understand urbanization challenges and their relationship with spatial planning and governance systems. Findings reveal that spatial planning and governance systems are unable to manage urbanization effectively. Several planning gaps, such as the inability of the spatial planning system to align with the socio-economic context, the lack of policy instruments that provide practical solutions to urbanization challenges, the mismatch between planning and natural resources, the inefficiency of the land subdivision system, the ineffectiveness of urban growth boundary policy, and the poor performance of the public transportation system, have contributed to this lack of inability. The findings reveal a number of governance gaps, such as lack of coordination and overlapping roles between public authorities, centralization, lack of public participation, and insufficient information, have hindered the ability of public authorities to manage urbanization efficiently. To enhance the urban environment, this study provides important insights for policymakers to improve the overall performance of spatial planning and governance.

Introduction

Urbanization, as a human and physical phenomenon, is one of the fundamental driving forces of socio-economic, cultural, and environmental changes worldwide. Urbanization creates changes in the size and density of cities due to the concentration of population in urban areas more extensively than in rural areas. According to the World Urbanization Prospects Report, developed by the World Bank (2018), 55% of the world's population is currently

living in urban areas; 68% of the world's population will be living in urban areas by the year 2050, with approximately 90% of this mass urbanization will take place in developing countries. Urbanization is a vital instrument for modernization and economic development; it is considered an inevitable trend of human social development (World Bank, 2021; Lu *et al.* 2019; Wu *et al.* 2019).

Over the past decades, urbanization has been increasing rapidly in Middle East countries. According to the World Bank (2022), most of the Middle East countries have the highest rates of urban population worldwide; for example, the urban population percent in Jordan is 91.8%, Saudi Arabia 84.7%, Kuwait 100%, and Qatar 99.3%. Such rapid urbanization has created urban challenges in terms of transport, housing, environment, land cover, water, energy, services quality, and agricultural land (Fang & Wang 2021; World Bank 2019; Xu *et al.* 2016; Alnsour, 2014). It has been widely discussed that the urbanization process is unable to achieve sustainable development and improve the quality of life in Middle East countries (Alnsour 2016). In this context, spatial planning is the primary instrument to achieve sustainable development through adopting appropriate technical policy means and controlling urbanization efficiently (Korah *et al.* 2024; Hussain *et al.* 2024; Alnsour & Meaton 2015). However, several international initiatives have emerged to guide countries to which planning policy should be adopted to respond effectively to the urbanization challenges, such as the Sustainable Development Goals (UNSDG, 2015), the Sendai Framework for Disaster Risk Reduction (UNISDR, 2015), the New Urban Agenda (UN-Habitat III, 2016), and the COP21 (UNFCCC, 2015).

Aldegheishem (2023) considers planning a governance activity influenced by socio-economic and environmental dimensions. However, governance can produce new spatial planning models to meet urbanization's complexity (Korah *et al.* 2024). It, instead, implies that the governance system provides practical solutions to the implementations of plans, meaning the continuous need for the improvement of both spatial planning and governance systems to be able to meet urbanization challenges (Nelson 2015; McGill 2020; Salaj & Lindkvist 2021; Menzori, *et al.* 2021).

The inability of spatial planning and governance systems to improve the quality of life effectively and the growing urbanization challenges increasingly in Middle East countries (Alnsour 2016; Al-Hathloul 2017) raises the question of why planning and governance systems have not controlled urbanization effectively and associated challenges. Therefore, this study uses the city of Amman in Jordan to contribute to urban research and reveal the gaps and constraints of governance and planning systems regarding rapid urbanization. Amman has experienced rapid urbanization associated with socio-economic and environmental challenges. Jordanian local authorities are concerned with improving quality of life; thus, a better understanding of how gaps in governance and planning systems affect the management of urbanization, decrease the ability to meet urbanization challenges, and propose implications to overcome gaps in spatial planning and governance systems. The empirical results of this paper will provide useful insights to improve the performance of local authorities in Jordan. Although the literature has widely discussed the environmental and socio-economic aspects of urbanization, there has been limited research on the nexus between the spatial planning, governance, and urbanization in the context of the Middle East region (Cengiz *et al.* 2022; Jaad & Abdelghany 2021; Salimi & Al-Ghamdi 2020; Aina *et al.* 2019). Therefore, an empirical investigation into the role of governance and planning systems in managing urbanization could significantly improve knowledge.

1. Urbanization, Planning and Governance in Amman

Amman started its development in the early 1900s by establishing the Hashemite Kingdom of Jordan as a state. In 1918, the population of Amman was less than 5,000, covering an area of less than 0.321 km^2 (Alnsour 2016). Moreover, the inhabitants of Amman were living a traditional lifestyle, with economic life dependent mainly on agriculture. Therefore, the most crucial challenge was improving the quality of life in Amman, which had become the capital (Al-Hadidi *et al.* 2023). Hence, several institutions were established during the 1920s to provide public services, such as the Department of Public Health, the Department of Mail and Telephones, the Department of Public Affairs, and the Departments of Education and Antiquities (Robins 2004).

From 1930 to the early 1940s, the population number was 10,500 inhabitants, and the city had grown to cover an area of 2.5 km2 (Potter *et al.* 2009). In 1948, the city increased to reach 4.132 km2 due to the first Palestinian refugee migration to Jordan, and the number of the city's residents was estimated to be 104,000 inhabitants (Al Rawashdeh & Saleh, 2006). The city needed more infrastructure, services, and planning frameworks to guide urbanization. Most departments were turned into ministries, including the Ministry of Health, the Ministry of National Economy, and the Ministry of Education. As a result, the period from the establishment of Jordan in 1921 to 1948 was characterized by the development of guidelines for planning through the creation of planning and service institutions and the establishment of several laws to manage urbanization.

Between 1950 and 1980, Amman's population had increased to outstrip 400,000 inhabitants in 1969, with an urban area of 56 km^2, as a result of a natural increase in population and the second forced migration of Palestinian refugees to Jordan due to the occupation of the West Bank by Israel. In the early 1980s, Amman's population was estimated to be 777,800 inhabitants, with an urban area of 101 km2 (Alnsour 2016). The general framework of spatial planning for Amman was established in 1950 by extending the tasks of Amman Municipality. The framework focused on guiding urbanization and service provision at different spatial scales (Alnsour 2016); hence, the first development plan for the city of Amman was settled in 1955 by foreign consultants (Greater Amman Municipality (GAM), 2005). The objective of the plan was to improve services and control urban expansion. Despite the plan having considered several subjects, it was not able to adequately expect the accelerated demand for housing, infrastructure, and services, leading to a lack of other services, such as commercial areas, transportation facilities, and green areas.

In 1966, Jordan enacted the Town and Country Planning Act, No. 79, in collaboration with foreign consultants (GAM, 2005). The primary aim of this legislation was to foster the sustainable development of both urban and rural environments. The act delineated the urban planning procedure into three levels: national, regional, and local. At the national level, Jordan instituted the Higher Planning Council, responsible for formulating public policies related to urban planning and land use. Additionally, it played a role in approving local and regional plans. At the regional level, the planning process focused on implementing the suggestions outlined in public policy, considering the spatial aspects of socio-economic development. At the local level, the act served as a framework to enable authorities, granting them the capacity to carry out different functions. The planning authorities' capabilities were explicitly outlined in the act itself. In fulfilling these duties, a local authority was required to formulate a two-tiered development plan aimed at planning its specified area. Moreover, the responsibilities of local committees extended to the approval or denial of planning applications within their jurisdiction. These decisions were instrumental in enhancing the effectiveness and adaptability of urban planning at the national, regional, and local levels.

As a result of the plan's inability to cope efficiently with urbanization, the Master Plan of 1968 was developed by foreign consultants. The Master Plan focused mainly on services to support the expansion of Amman and control urbanization. Nevertheless, the plan was designed without conducting comprehensive surveys (Alnsour 2016). It was a technical policy instrument to guide spatial planning in the city, rather than a scenario for future land use. Although the Master Plan was characterized by flexibility, challenges continued to increase, including the expansion of irregular housing, decreasing agricultural land, low-quality services, and over-centralization of commercial and administrative activities (Alnsour 2016). In conclusion, most challenges were not encountered adequately, and the Master Plan was not executed generally because of a lack of financial resources (GAM 2005).

Amman's population had increased rapidly to outstrip 1.5 million inhabitants at the beginning of the 1990s, with an urban area coverage of 150 Km2 by the end of the 1990s (Al Rawashdeh & Saleh 2006). To enhance the capacity of urban development, Jordan has considered the Urban Management Program (UMP), developed by the United Nations Centre for Human Settlements (UNCHS), the United Nations Development Programme (UNDP), and the World Bank in 1986, to improve the capacity of municipalities, infrastructure management, land management, environment management, and poverty alleviation. In response to urban challenges, in 1988, the GAM developed the second Master Plan to control urbanization and enhance future development in the city (GAM, 2005). The plan suggests a gradual spatial change in the organization of Amman by creating concentrations in the new development areas while keeping all primary services and employment sectors in the centre of the city.

In 1990, due to the first Gulf War, approximately 400,000 Jordanians were returned to Jordan from the Gulf States to settle in Amman (Potter *et al.* 2009). These returners had created additional pressure on services, infrastructure, housing, and jobs. The matter became more complicated due to severe economic conditions and a lack of natural resources such as energy and water. In response to these challenges, Jordan established the Housing and Urban Development Corporation (HUDC) in 1992 to provide housing for low-income people (Alnsour 2016).

By the early 2000s, the urban area was estimated to be 162,924 km^2 (Al Rawashdeh & Saleh 2006) and increased to 640 km2 by 2013 (Alnsour, 2016). In response to rapid urbanization, the GAM developed the Master Plan of 2008 to meet urban challenges and design the future development of Amman. In anticipation of the 2008 Master Plan, the preparatory process encompassed several elements. These included formulating policies and strategies and conducting reviews of land policy, laws, and institutional frameworks. However, the Master Plan has unexpectedly met a new challenge, which is Syrian refugees' migration to Jordan in 2011 during the Arab

Spring period. There were estimated to be 1.4 million refugees at that time, creating barriers to implementing the Master Plan adequately, with increasing pressure on infrastructure, services, housing, water, and energy (Alnsour 2014). Accordingly, rapid urbanization has increased socio-economic and environmental challenges. In response to these challenges, current spatial planning practices have observed several changes in the transformation of urban governance. These changes include the revision of institutional frameworks, the establishment of the Decentralization Council of Amman (DCA) and other Jordanian cities, the relative autonomy of municipalities in decision-making, and the modification of spatial planning guidelines. Such transformations have contributed to improving the socio-economic and environmental conditions in Amman. In addition, Jordan Vision 2030, took spatial planning practice into account by focusing on urban development, climate change, and quality of life.

Urban growth in Amman is still sprawling dramatically due to leap-frog development, in which the cost of service provision is increasing and efficiency in their usage is reducing. Currently, the population of Amman exceeds 4 million inhabitants, with an urban area of 800 km^2 (GAM, 2022). As different institutions are concerned with urban development, the fundamental challenge is unifying action between various actors, considering the current transformation toward the governance system and the evolution of spatial planning instruments. Urban challenges continue to occur within such an institutional framework, with the need for modification in spatial planning instruments. Therefore, searching for gaps in planning and governance systems and setting reasonable recommendations for dealing with these gaps would improve the ability of urban authorities to respond effectively to urban challenges.

2. Research Methodology

This study aims to explore gaps in the spatial planning and governance systems that affect the ability of local authorities to manage urbanization in Amman, Jordan. We use a qualitative method utilizing in-depth interviews with top managers to understand urbanization challenges and their relationship with spatial planning and governance systems. Top managers were selected depending on their technical experience, knowledge of spatial planning and urbanization, and executive practices in urban governance. Twenty-two interviews, face-to-face, were conducted with top managers from different urban authorities in Amman. The target was thirty interviews, but eight managers did not participate in this study. Table 1 presents more details on interviews.

Table 1. Profile of interviewee

Urban Organizations	Target number of interviewees	Actual number of interviewees
GAM	19	15
HUDC	6	4
DCA	5	3
Total	30	22

The interview consists of the following sections:

- The first part establishes how urban authorities understand urbanization, governance, and spatial planning. Questions in this section aim to explore and identify a practical understanding and perception of urbanization, governance, and spatial planning.

- The second section aims to diagnose gaps in planning and governance systems that hinder the ability of urban authorities to control urbanization.

- The third part focuses on reaching practical solutions to current gaps in planning and governance systems and urbanization challenges.

3. Results and Discussion

The following subsections present gaps in planning and governance systems based on qualitative results.

3.1 Planning Gaps

The interviewees declared that the spatial planning system in Jordan stemmed from Western planning models and master plans developed by foreign consultants. Western models were established depending on the free market, open economics, good governance, and extensive public participation. The differentiation of socio-economic, political, cultural, and environmental contexts between Jordan and Western countries has made the Jordanian planning system unable to effectively improve quality of life and control urbanization. One of the interviewees said:

The current spatial planning system cannot solve urban challenges effectively; thus, problems will continue unless the planning system is revised to be consistent with local socio-economic and cultural contexts. The government has spent millions on the current planning system without achieving sustainable urbanization.

The results show that 82% of the interviewees observed that adopting foreign experts to develop master plans has led to several disadvantages. On the one hand, foreign experts are affected by their Western planning perceptions when designing master plans. On the other hand, foreign experts usually need more inclusive knowledge of socio-cultural priorities. Additionally, these experts could not predict the future urban growth of Amman. For example, master plans witnessed numerous changes during a short period; these changes did not create sustainable development. Therefore, master plans developed by foreign experts have not improved sustainable development adequately.

According to the interviewees, spatial policy instruments did not provide effective planning interventions for urbanization management. Spatial policy instruments refer to regulations, master plans, building codes, urban growth boundaries, land subdivision systems, local plans, detailed plans, and strategies. However, 75% of the interviewees showed that these instruments could have provided practical interventions to the gaps in spatial planning systems, where many urban problems are growing. For instance, interviewees revealed that the policy of urban growth boundaries did not overcome the sprawl of urban growth outside formal boundaries set by municipalities. The problem is related to undeveloped vacant land lying in serviced locations.

73% of the interviewees stressed that spatial policy instruments were not subject to inclusive review. Policy instruments focus on the physical aspect and must provide an inclusive framework for natural resources and sustainable development. For example, the building regulations have identified a set of building standards, such as land area, ventilation spaces, percentage of the building, the height of the building, and the frontage of the plot. However, it did not identify urban design standards such as the overall house area, meaning people can build in any design and space they like; thus, the building standards policy does not preserve natural resources such as water and energy.

Building regulations have specified several standards at a minimum level, including land area, ventilation spaces, and the frontage of the plot; others, such as the number of floors, are specified at a maximum level with high flexibility in increasing the number of floors. These standards have failed to increase residential density or reduce the overall service delivery, transport, and infrastructure costs. One of the interviewees commented by saying:

The outcomes of a low-density policy are horizontal urban expansion, more burden on services and infrastructure, and increased distance travelled. These outcomes have created economic, spatial, and environmental problems in the context of sustainable development.

Land subdivision using the downzoning approach is dividing residential land into large plots, such as a minimum area of 1000 m2 for category A, 750 m2 for category B, and 2000 m2 for the private category; at the same time, the system allows to merge several plots, and the area of construction is undetermined. These subdivisions do not allow vertical expansion and create more pressure on infrastructure and transport. Interviewees declared that many people built their houses in areas more than they needed, meaning exhaustion of water and energy.

91% of the interviewees declared that Amman has an ineffective public transportation system because master plans have not highlighted public transportation. Instead, they argued that plans considered the private automobile as Amman's only mode of transportation. Therefore, interviewees observed the need to establish a public transportation network for Amman. This public transportation network should include Metro lines with Bus Rapid Transit, community bus lines, feeder buses, and park-and-ride facilities at the city's gates.

68% of the interviewees pointed out that spatial planning systems still need to provide a more effective framework for economic implications since the economic benefits of urbanization still need to be improved. The spatial policies that most significantly impact city economies often come from the higher scale of the residents (*i.e.*, wealthy group), meaning the inability of middle- and low-income people to affect urban economics. It also explains why agglomeration economies and the beneficial effects of urban size and local diversity are unclear. Moreover, current policies do not provide complete planning intervention towards technological change, where attempts to transfer into smart cities meet several challenges, such as a lack of spatial databases.

The last gap mentioned by 64% of interviewees is that 45% of Jordan's population lives in Amman. The main driver of this urban variation is the concentration of most services and commercial activities in Amman. Interviewees declared that Jordanian cities are unlinked developmentally to each other because master plans and

spatial policies did not establish development epicentres between cities. As a result, the economic role of the whole city is still limited, and urban sprawl in Amman tends to be accelerated.

3.2 Governance Gaps

The primary idea for establishing an urban governance system is to approve plans and manage cities through appropriate policy and technical instruments. According to 64% of interviewees, the central government approved several master plans and strategies to steer future development and cope with the urban challenges. For instance, the strategic plan for Amman development developed by GAM in 2022 was one of the most significant attempts to restructure Amman city; it is concerned with (1) establishing new metropolitan sub-centres with organizing services, (2) improving public transportation, and (3) establishing the green building. The strategy asked for more coordination between public authorities and emphasized the significance of a single, unifying policy for coordination. However, 77% of the interviewees declared that public authorities could not coordinate their work with each other. They observed that the management of urbanization could not effectively deal with multi-sectoral actions and plans, which may appear simultaneously, indicating a lack of coordination. This situation is aggravated negatively by overlapping roles since each public authority has laws and regulations that differ from those of other authorities. One of the interviewees provided an example:

The Municipality of Amman (Amana) has urban transportation policies, and so do the Ministry of Transportation, Land Transport Regulatory Commission, and Traffic Department/Police. Unfortunately, these four distinct authorities, guided by the same community, need to be more coordinated, while positive coordination can enhance the performance of urban governance.

Centralization is an essential factor affecting the coordination level between urban authorities. 75% of the interviewees revealed that centralization and multi-organizations concerned with spatial planning and management of urbanization had created obstacles to the current decision-making process and restricted the realization of executive plans. Interviewees argue that there are no fixed technical and managerial links between public authorities in Amman, such as ministries, GAM, and the other local councils and commissions, which leads to carrying out different strategies. Numerous conflicts in existing plans and strategies challenge governance's structural and functional performance. Empirical findings show a need for coordination across various public authorities and sectoral departments.

Qualitative results show that several issues in the context of urban governance need to be addressed, including sustainable development, transportation systems, general environmental systems, and legislative frameworks. 64% of the interviewees revealed that numerous changes in the urban governance system are still in the suggestion phase, leading to ambiguous procedural policy in managing urbanization. Interviewees discussed that the main challenge is the implementation of plans, where the nature of the decision-making process creates obstacles and delays in implementing spatial plans and strategies. Moreover, time-consuming and bureaucratic procedures have led to inflexibility in implementing plans. One of the managers provided a good example:

The implementation of the first phase of the Bus Rapid Transit Project took more than ten years, and the overall project has not been accomplished yet.

According to 53% of the interviewees, Jordan uses a centralized approach to manage urbanization. Centralization refers to a lack of administrative and financial autonomy. The knowledge of managers and experts in urbanization challenges is restricted by providing proposals in line with a centralized system. Hence, a more centralized system is likely to affect the performance of urban authorities in facing urbanization challenges. 82% of the interviewees revealed that issues such as uniformity of action, improving motivation, and effective communication are essential in reducing centralization. Empirical results show that 64% of the interviewees believe that a centralized system results in low-quality services, wrong decisions, and an absence of real needs and priorities of people. However, 36% of the interviewees believe that a centralized system helps control financial resources and distributes fairly the economic benefits of the urbanization process between urban areas. In addition, all the interviewees confirmed that Jordan had already started the transformation into a decentralized system, enhancing the norms of accountability and transparency. However, the transformation process into governance is still in the development phase.

82% of the interviewees declared that public participation could have contributed more clearly to effectively enhancing the planning and governance systems. The objectives of public participation need to be more adequately transparent, and the level of participation tends to be low. Although the government has already

taken several necessary steps to promote public participation, such as establishing the Independent Election Commission, these steps are insufficient to determine goals and instruments to enhance public participation.

Qualitative results pointed out that participants' knowledge level in planning and governance affects the success of community participation. 68% of the respondents commented that the complexity of urbanization problems requires stakeholders' technical knowledge. Managers noted that several factors influence available knowledge, such as experience, education, training, and technical capacity. However, a lack of effective communication with stakeholders could hinder the benefit of knowledge and create an unwillingness to participate. Despite recent positive transformations toward urban governance in Jordan, the influence of effective communication remains essential in promoting community participation. Mistakes could have happened in preparing and implementing plans, but effective communication contributes to overcoming such mistakes.

91% of the interviewees discussed the importance of social media in improving public participation. On current social media sites such as Facebook, Twitter, Instagram, etc., public authorities do not interact with people because authorities do not prefer to publish information on social media, leading to a lack of responsiveness to citizens' perceptions and opinions. According to interviewees, laws and regulations do not encourage sharing information with the public. However, many interviewees see that published information and facts can positively affect the performance of urban authorities. One of the interviewees believes:

Providing information and facts on social media could lead to solutions to urban problems.

Urban authorities' inability to benefit from social media networking has led to weak interaction between the public and authorities. Thus, embedding social media in laws and regulations is necessary. In addition, the non-existence of a unified account of all public authorities makes people unable to follow urban issues, creating communication obstacles between authorities. Empirical findings reveal the need for unified legislation for social media usage among public authorities.

According to 68% of the interviewees, urban data at detailed levels need to be more comprehensive, with a need for shared databases between public authorities. Thus, the non-existence of spatial databases at all planning levels is one of the main challenges to controlling urbanization and guiding future development. For example, one of the interviewees said:

An unavailable spatial database that embraces detailed information at all planning levels has hindered the performance of governance.

Conclusion and Policy Implications

This paper provides significant insights into spatial planning and governance's theoretical and practical aspects. Theoretically, it contributes to the literature on urbanization, spatial planning, and governance systems by providing empirical evidence of how planning and governance gaps affect the ability of public authorities to control rapid urbanization. Although spatial planning and governance are considered practices adopted by world countries, investigating spatial planning and governance theory in the context of urbanization is vital for researchers and managers; thus, this paper extends the research conducted on planning and governance. Furthermore, this study provides empirical evidence that could contribute to conducting comparative studies in the context of Middle Eastern countries, as comparative research enriches knowledge widely. Finally, this study explores the gaps in spatial planning and governance in the context of Middle Eastern countries, as studies on spatial planning and governance in Jordan are very limited.

Over the past hundred years, Amman has experienced both positive and negative transformations in managing urban growth. Positive changes have included the establishment of planning institutions, the formulation of various plans, and the enactment of laws and regulations, all contributing to sustainable urban development. However, negative transformations have also occurred as a result of urban growth, manifesting in unorganized urbanization, traffic congestion, and environmental problems. This study presents empirical evidence on the factors influencing planning and governance in managing urbanization.

The study concludes that Amman's urban authorities need help to effectively meet the challenges of rapid urbanization due to gaps in the spatial planning and governance systems. The significant planning gaps include the spatial planning system not being aligned with the local socio-economic context. Master plans developed by foreign experts who have no inclusive knowledge of the socio-cultural dimensions and people priorities; urban policy instruments are unable to provide practical solutions to the inherent gaps in spatial planning systems, and the spatial planning system has not succeeded in establishing a realistic framework related to natural resources and sustainable development, and land subdivision increased pressure on infrastructure, services, transport, water, and energy consumption, the policy of urban growth boundaries did not overcome the sprawl of urban

growth outside formal boundaries, Amman city has no comprehensive public transportation because master plans have not highlighted the public transportation and extensive concentration of services in Amman.

Governance gaps include a lack of coordination between public authorities, overlapping roles since several public authorities have similar tasks and plans, centralization has created obstacles to the current decision-making process and restricted the realization of executive plans, procedural ambiguity in managing urbanization, a lack of public participation, the ineffectiveness of social media in urban authorities for improving public participation, and insufficient urban data at a detailed level with a lack of shared databases between public organizations.

In conclusion, several implications should be considered, including a comprehensive revision of spatial planning laws to become more appropriate for the local socio-economic context. Conducting a cost-benefit analysis of current policy instruments could maximize the economic benefits of spatial planning. Creation of a national framework to link spatial planning to the governance system. Establishment of a unified urban policy to remove overlapping roles between urban authorities for improved coordination. Foster information exchange across urban authorities to raise the level of coordination. Enablement of local authorities by giving them appropriate space for administrative and financial autonomy to enhance the decision-making process and encourage public participation by raising awareness among stakeholders and people directly and indirectly. Improvement of information quality by mapping data against the different stages of the information lifecycle and improving information content at all spatial planning levels.

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Credit Authorship Contribution Statement

Abdullah Radwan Arabeyyat: developed the concept and plan for this project research, and reviewed and edited the manuscript.

Jamal Ahmad Alnsour: carried out the project administration, collected the data, carried out the analysis, wrote the manuscript.

Sakher A. I. Al-Bazaiah: developed the concept and plan for this project research, carried out the project administration.

Mahmoud A. Al-Habees: collected the data, conducted a literature review, and wrote the manuscript.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Abstract: Bibliometric analysis is a widely recognized approach for examining extensive scientific data sets. However, its application is relatively new, particularly in greenwashing within the environment. As a comprehensive concept, sustainability encompasses various aspects, and greenwashing has emerged as a specific branch that has garnered increased attention and research in recent years. The study's primary purpose is to deploy the bibliometric method to analyze greenwashing literature from 2003 to 2023 using the Web of Science Core Collection and VOSviewer software to identify and visualize the intellectual landscape of the field. The number of scientific publications related to the topic confirms the importance and popularity of the subject. In this period, a total of 807 publications on the topic of greenwashing were identified, and three different periods were set. Most publications and citations primarily come from the USA, China, and other developed European countries. In terms of journals, prominent publications hold positions in the top 10, such as the Journal of Business Ethics, Journal of Cleaner Production, Business Strategy and The Environment, and Sustainability. The topic mainly concerns social and natural sciences branches, emphasizing corporate social responsibility and environmental concerns. Regarding keywords, four clusters can be distinguished as being in the center of governmental, consumer, corporate, and management issues. The ongoing trends predict a persistent rise in worldwide publications regarding greenwashing.

Keywords: bibliometric analysis; greenwashing; sustainable development; Vosviewer; environmental business; science mapping.

JEL Classification: G38; M10; M14; M31; F64; Q56; O50; R11.

Introduction

A series of severe historical events - first the Covid-19 pandemic in 2019 (Barbier and Burgess 2019; Ranjbari *et al.* 2021), then the war in Ukraine in 2022 and the resulting food and energy crises (Zhou *et al.* 2023; Esfandabadi *et al.* 2022), third the rising inflation (Liadze *et al.* 2023), and the increasing despair and uncertainty of the people for the near term, shaped science, and consumer perceptions (Johnstone and Schot 2023). However, sustainability has remained central to the international political agenda, business and consumers over the past decades and has been recognized as a critical driver (Mandarić *et al.* 2022). Sustainability involves maintaining equilibrium between society, environment, and economy, often referred to as the triple bottom line. (Joshi *et al.* 2023) Nevertheless, there are several obstacles to achieving this. One such obstacle is greenwashing (He *et al.* 2022; Choudhury *et al.* 2023; Nygaard 2023), which is a barrier to economic development in a sustainable way (Jakubczak and Gotowska 2020), environmental management issue and an ethical question too (Szabo and Webster 2021).

The phenomenon of greenwashing is attracting considerable research attention from academics, scholars, governments, and non-governmental organizations (Montero-Navarro 2021; Wang 2023; Pendse *et al.* 2022) and not wholly unexplored; the current body of research remains limited (Choudhury *et al.* 2023).

This study is designed to provide a deeper understanding of greenwashing through knowledge mapping, more precisely, bibliometric analysis.

The article's novelty lies in its comprehensive analysis of the literature on greenwashing over twenty years, encompassing the years 2022 and 2023, a remarkable approach due to the significant increase in publications during the intervening years. Furthermore, the study recontextualizes the keywords associated with the topic, shedding light on current and emerging trends and ongoing research interests, thereby providing a thorough and insightful overview that underscores the potential directions for future research endeavors.

1. Research Background

Greenwashing is a complex phenomenon; therefore, the literature on greenwashing is composed of several dimensions. On the one hand, the research attention concentrated on the understanding of greenwashing with the definitions of the phenomenon (Delmas and Burbano 2011; Lyon and Maxwell 2011; Baum 2012; Bowen and Aragon 2014; Parguel *et al.* 2015; Lyon and Montgomery 2015; Tateishi 2018; de Freitas Netto *et al.* 2020) the taxonomy: forms, causes and type (Delmas and Burbano 2011; Yang *et al.* 2020; de Freitas Netto *et al.* 2020; Bernini and La Rosa 2023). As there is no widely recognized definition of greenwashing due to its lack of established theory, various scholars and experts have made efforts to define it in different contexts, all highlighting the misleading communication from companies to consumers that creates false positive impressions (de Freitas Netto 2020; Moodaley and Telukdarie 2023).

As Delmas and Burbano (2011) outlined, companies' inclination to greenwashing can be traced to three primary influencing factors: external, organizational, and individual. External influence may encompass inadequately structured and formulated legislation (Zhang *et al.* 2023), tension resulting from market pressures (Delmas and Burbano 2011), or expectations derived from institutional regulations, such as the Sustainable Development Goals established by the United Nations (Lashitew 2021; Nishitani *et al.* 2021). Organizational driving forces include tension from meeting consumer demands and maintaining a competitive advantage against rivals, the incentive framework and ethical atmosphere, organizational resistance, reluctance to change, and the efficacy of internal communication within the firm (Delmas and Burbano 2011; Gregory 2021). At an individual level, envisioned yet unimplemented green actions fall under greenwashing.

The form of it can be distinguished as a claim type of greenwashing and execution greenwashing (de Freitas Netto 2020). Greenwashing claims can be divided into two major types of deceptive claims. First are false appeals, meaning demonstrably false claims based on objective evidence. The second is vague claims, which are overly broad or poorly defined statements that create an incorrect impression. (Parguel *et al.* 2015; Schmuck *et al.* 2018; de Freitas Netto 2020). Executional greenwashing involves incorporating nature-evoking elements in advertisements to artificially enhance a brand's ecological image (Parguel *et al.* 2014; Parguel *et al.* 2015; de Freitas Netto 2020).

On the other hand, through the theoretical background, the researcher concentrates on the consequences of greenwashing. The causes can affect several areas: consumers (Martínez *et al.* 2020; Topal *et al.* 2020; de Jong *et al.* 2020; Wang *et al.* 2020; Szabo and Webster 2021; Bladt *et al.* 2023; Rahman and Nguyen-Viet 2023) corporations (Wu *et al.* 2020; Pimonenko *et al.* 2020; Uyar *et al.* 2020; Yang *et al.* 2020), stakeholders (Torelli *et al.* 2020; Ferrón-Vílchez *et al.* 2021; Pizzetti *et al.* 2021), society (Kurpierz and Smith 2020; Uyar *et al.* 2020; Yang *et al.* 2020).

The above shows the complexity and many faces of the subject, so this study is designed to provide a deeper understanding of the field through knowledge mapping, more precisely, bibliometric analysis.

Knowledge mapping has been extensively applied in bibliometric analysis (Gaviria-Marin *et al.* 2019; Gan *et al.* 2022; Farooq 2023). The bibliometric analysis approach was employed to assess the publication trends and patterns within the literature on greenwashing. The methodology devised by Archambault and Gagné in 2004 and Teixeira in 2014 will direct the current implementation of bibliometric techniques (Tavares-Lehmann and Varum 2021),

Bibliometric analysis is a well-known and rigorous quantitative method for analyzing large volumes of scientific publications to analyze publishing trends, conference papers, and other academic documents. (Donthu *et al.* 2021; González-Torres *et al.* 2020; Ellegaard and Wallin 2015). Thanks to digitalization, the method's popularity can be attributed to the accessibility (Saleem *et al.* 2020) of scientific databases such as Crossref, Web of Science, Scopus, and software, for example, VOSviewer, CiteSpace, Biblioshiny from medicine through

mathematics to business sciences (Petcu *et al.* 2023, Manoj Kumar and Goerge 2023). In the case of greenwashing, there are a few bibliometric analyses that are closely linked to the topic (Andreoli *et al.* 2017; Montero-Navarro 2021; Moodaley and Telukdarie 2023; Pendse *et al.* 2023; Wang *et al.* 2023), but still, aspects that need to be addressed.

The current paper aims to identify and visualize the intellectual landscape of the field, the publishing trends, and patterns in greenwashing from 2003 to 2023 by evaluating the frequency of citations, the country distributions of the nations, most cited authors, critical journals in the topic, existing or non-existing authorship patterns, main terms, and most used keywords. Hence, this study aims to concentrate primarily on greenwashing from a business and management perspective by answering the coming six research questions (RQs):

RQ1. What were the publishing trends in greenwashing between 2003 and 2023?

RQ2. What is the geographical distribution in the field of greenwashing?

RQ3. Which journals have been frequently preferred by researchers for greenwashing?

RG4.Which authorship and collaborative research patterns have been most common in greenwashing research?

RQ5.What are the hot keywords in greenwashing research so far?

RQ6. Which further research directions should be taken on this topic considering the latest research for 2023?

To this end, the rest of the paper is structured as follows: Section one describes the methodology used for the research. Section two presents the results of the bibliometric analysis that consists of co-occurring and co-citation analysis; then, the emerging trends of "greenwashing" are displayed. Finally, the conclusions and limitations of this study can be considered.

2. Materials and Methods

This research significantly enhances greenwashing studies by collecting and examining all publications on greenwashing found in journals indexed in the Web of Science Core Collection database (WoS). To present the results systematically, a bibliometric analysis approach was employed to scrutinize the attributes of these publications.

2.1 Database

Several databases exist to conduct indexing and abstracting (Pranckutė 2021). Hence, it is an existing multidisciplinary and subject-specific database which abstracts high-quality articles in case of this paper it was used data from WoS by Clarivate because, based on Liu (2021 p. 849), "WoS is one of the largest and "most authoritative bibliographic databases". The Web of Science encompasses general, cited references and advanced search features, offering various tools to manipulate search results (Hu *et al.* 2018; Chen *et al.* 2024; Santos *et al.* 2023). It is internationally recognized for adhering to the highest quality standards and is widely accepted and utilized for the analysis of scientific publications (Mongeon and Paul-Hus 2016; Li *et al.* 2018; Birkle *et al.* 2020; Rashid 2023) furthermore, WoS was used in the bibliometric analysis in numerous social science studies too (Amirbagheri *et al.* 2019; Camón Luis and Celma 2020; Escamilla-Fajardo 2020; Rocio *et al.* 2023). The study opted for the WoS Core Collection database to maintain neutrality and provide enlightening research information. (Kasperiuniene and Zydziunaite 2019; Kuc-Czarnecka and Olczyk 2020; Yan and Zhiping 2023; Zhang *et al.* 2023).

2.2 Software

Knowledge mapping is an influential methodology in bibliometrics (Jin *et al.* 2019), as it enables the examination of intellectual connections within a dynamically evolving realm of scientific knowledge (Baier-Fuentes 2019). This study adopted VOSviewer to achieve the research objectives. VOSviewer is digital bibliometric software that is internationally acknowledged among scholars (Baier-Fuentes *et al.* 2019; Niknejad *et al.* 2021; Kuzior-Sira 2022; Mostafa Hatami *et al.* 2022; Trang *et al.* 2023; Răcășan *et al.* 2023; Sangari *et al.* 2023; Chetanraj and Senthil Kumar 2023) which is suitable for constructing and visualising bibliometric networks (van Eck and Waltman 2010; Perianes-Rodriguez *et al.* 2016; Smyrnova-Trybulska 2018; Borgohain *et al.* 2022).

2.3 Search Strategy

In the WoS Core Collection, the following search query (Table 1.) was run on 7 January 2024: "greenwashing*" (topic) OR "greenwash*" (topic) OR "green washing*" (topic) OR "green wash*" (topic) OR "green-washing*" (topic) OR "green-wash*" (topic) AND 2003 – 2023 (Year published) AND "Articles" (document types) AND

"English" (Language). Following the search as mentioned earlier rules and manual checking to eliminate duplicates or articles unrelated to the research topic, a total of 807 articles were finally obtained for this paper. Regarding the Citation report, these 807 publications give 12.853 citing articles without self-citations.

Table 1. Literature retrieval rules

	Details
Retrieval Time	7 January 2023
Data Source	Web of Science - Core Collection
Topic	"greenwashing*" OR "greenwash*" OR "green washing*" OR "green wash*" OR "green-washing*" OR "green-wash*"
Time interval	2003 to 2023 (last 20 years)
Number of sources	807
Citing articles (without self-citations)	12,853
Time cited (without self-citations)	17.211 (25.37 average per item)
H-Index	71

Source: own edition based on Web of Science database.

3. Analysis and Findings

3.1. Publishing Trends

This section unveils the principal outcomes of the performance bibliometric analysis applied to records associated with greenwashing in business and management research published between 2003 and 2023. The number of publications and citations about greenwashing for two decades is shown in **Figure 1**. Based on this, three main periods can be defined: P1 between 2003-2011, a stagnating growth; P2 between 2012-2018, a slow growth; P3 between 2019-2023, and exponential growth.

Figure 1. Times Cited and Publications Over Time
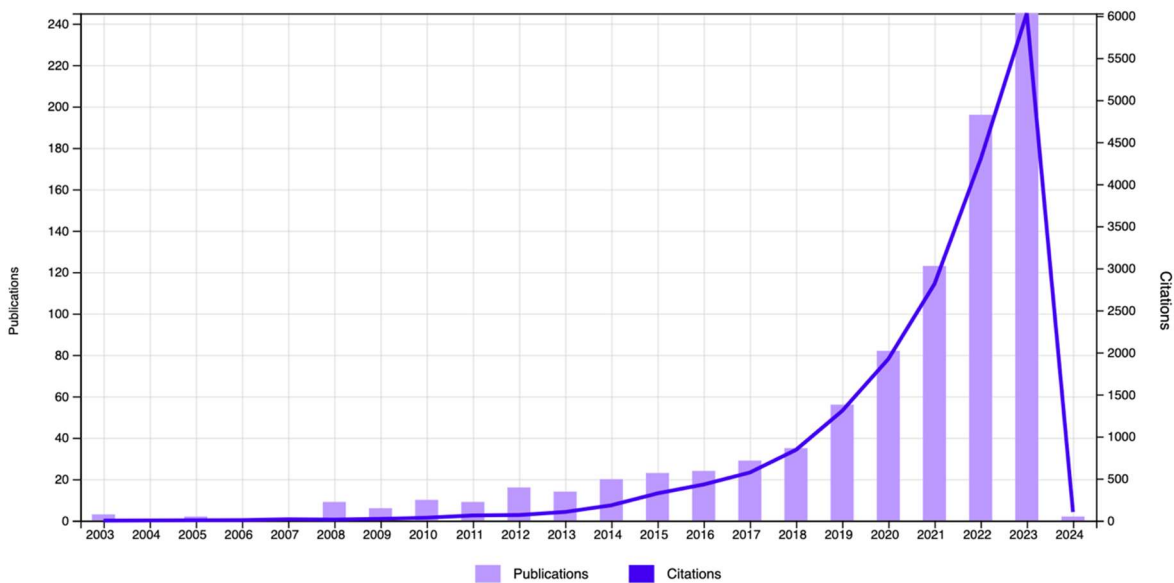
Source: own edition based on Web of Science database.

Between 2003 and 2011 (P1), there was a period of awakening with fluctuating slow growth, where the number of publications ranged from a minimum of 0 to a maximum of 10. During this period, a total of 34 publications were produced, constituting 4.21% of all publications. From 2011 to 2018 (P2), a slow and more stable growth phase was observed, with the number of publications ranging from a minimum of 13 to a maximum of 333, showing continuous growth except for 2015 and 2017. This period encompassed a total of 146 publications, accounting for 18.10% of all publications. From 2019 onwards, an exponential growth trend is noticeable, especially in 2021, where the number of publications increased by 58.71% for the year 2022, and then from 2022 to 2023, the growth rate was 25.58%. These 627 publications represent 77.69% of all publications. This growth rate is also supported underlined by Wang *et al.* (2023). In the P1 period, the most cited article was

Social Accountability and Corporate Greenwashing from Laufer WS, in 2003, with 675 citations (the second most cited article out of 807). From P2, the most cited article (819 times), based on WoS, is Delmas and Burbano's (2011) work, "The Drivers of Greenwashing," which can be considered foundational for the subject. From P3 the most cited article is Greenwashing in environmental, social and governance disclosures by Yu, Van Luu and Chen from 2020 with 167 citations. Another important paper on the topic which is not a core part of scientific databases and cannot fail to be mentioned is the work of Terrachoice's Marketing: "Six Sins of Greenwashing" (2007) and "The Sins of Greenwashing: Home and Family Edition" (2010) (Nemes *et al.* 2022). Based on Google Scholar, Terrachoice occurs 2220 times in the database, and for example, the most cited article from Delmas and Burbano (2011) occurs 2990 times.

To answer the first question: What were the publishing trends in greenwashing between 2003 and 2023? the publishing trends in greenwashing between 2003 and 2023 are an emerging topic that has gained importance mainly in 3 years. During the P3 period, publications on the bibliometric analysis of greenwashing were published in 2017 (Andreoli *et al.*), 2021 (Montero-Navarro) and 2023 (Telukdarie; Pendse *et al.*; Wang *et al.*), but **Figure** 1 displays that the high number of articles published in 2023 (216) is an incentive for further analysis of the topic. It has taken a long time since Jay Westerweld coined the concept of greenwashing in 1986 (Ranjbari *et al.* 2021) for the phenomenon to receive significant attention from the scientific world.

3.2. Influential Countries

Besides the publishing trends, the geographical distribution of the area likewise gives a better understanding of how greenwashing trends have evolved over the last 20 years. Numerous countries are contributing significantly to studies on greenwashing; therefore, the following section focuses on the output of the most prominent countries between 2003 and 2023. Table 2 presents the results of the top 10 nations in terms of publications in the field of exploration. The ranking is based on the number of published papers. Table 2 reveals that the two leading countries for publications on the subject are the USA and China, accounting for 38.29% of all publications greenwashing.

Table 2. Top ten countries based on the number of publications

Rank	Country	Documents	%	Citations
1	USA	159	19.83 %	7345
2	People republic of China	149	18.46 %	2415
3	England	88	10.90 %	2168
4	Canada	55	6.82 %	2274
5	Australia	49	6.07 %	1023
6	Germany	48	5.95 %	1034
7	Italy	44	5.45 %	1160
8	Spain	43	5.33 %	555
9	France	34	4.21 %	1415
10	Netherlands	31	3.84 %	777

Source: own edition based on Web of Science database.

The USA and China are considered the two most prominent countries concerning publications on the topic. The first publication in the USA dates to 2003, while in the case of China, it occurred in 2013. Looking at the last two years (2022 and 2023), it is evident that the topic has gained significant attention in China. The USA published 53 publications in the two years, while China published 109. Therefore, the awareness and research on greenwashing started earlier in the USA. Still, China has also intensified its focus on the phenomenon in recent years, as reflected in the number of citations. In terms of continents, the top 10 ranking includes Europe (England, Germany, Italy, Spain, France, and the Netherlands) in first place with 288 publications, North America (USA, Canada) in second place with 214 publications, Asia (China) in third place with 149 publications, and Australia in fourth place with 49 publications. In this perspective, South America and Africa are not yet the focus of interest for greenwashing in these regions.

Figure 2. Countries co-authorship network
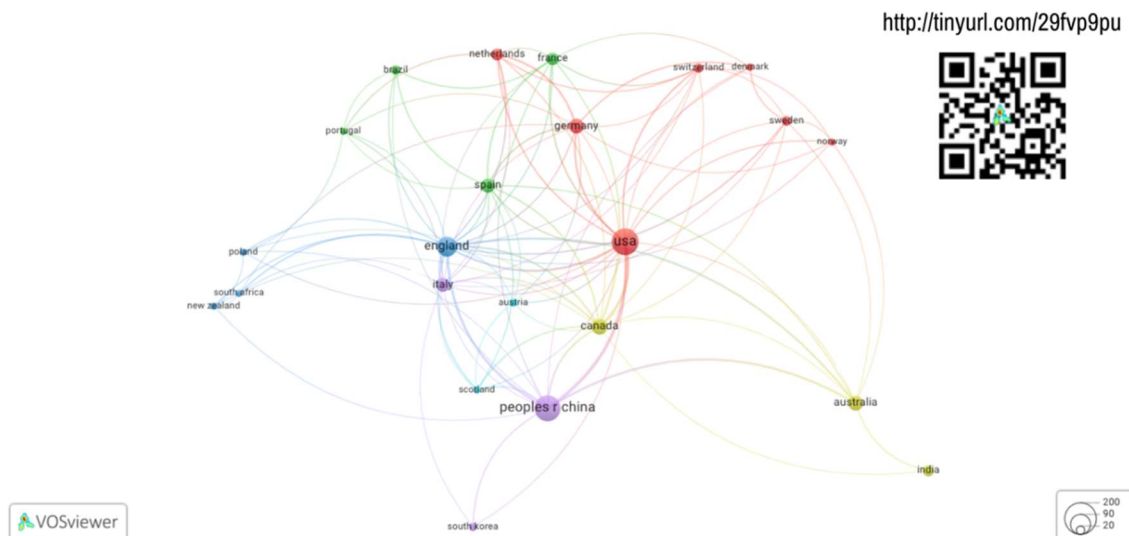
Research collaboration can be effectively captured through co-authorship networks, as co-authorship is a highly visible and well-documented scientific collaboration (Ullah *et al.* 2022). Co-authorship involves two or more contributors collaboratively presenting their research findings on a specific topic (Hosseini 2020). As a result, co-authorship networks can be seen as social networks that include researchers, illustrating their collaboration. In these networks, countries are represented as nodes. Nodes are connected if the respective country has co-authored at least one publication, with or without additional co-authors. Furthermore, link weights can be introduced to convey the intensity or strength of research collaboration.

The threshold value for the number of publications per country was manually established at 10 to focus the analysis on the most active countries in this field. Out of the 86 countries, 23 surpassed this threshold. Using these 23 countries, the total strength of bibliographic coupling links with other nations was calculated.

In Figure 2, the circles' sizes indicate the number of publications from different countries, while the lines' thickness represents the collaboration level. For example, the strength of collaboration between the United States and China was depicted as 15, which is shown as a thick line. Conversely, the collaboration strength between the United States and Poland or South Korea was weaker 1.

The 23 countries included in the analysis were divided into 6 clusters, with the cluster marked in red having the largest number of elements. In this cluster, the USA has the highest total link strength, reaching 61, showcasing the outstanding scientific role of the United States. England follows with a total link strength of 57, and China has 47. This is supported by their relatively central positions on the graph. It is also essential to note Austria's central role and Australia's peripheral position despite being the fifth-highest contributor to publications.

In summary, the United States, China, and several developed European countries (such as England, Germany, and Italy) play a significant role in the topic. In contrast, African and Southern European countries lag. Furthermore, the leading countries engage in substantial collaboration with each other.

3.3. Journals

Another essential aspect of the bibliometric review was looking at the most influential journal contributing to greenwashing over the last twenty years. The purpose is to examine which journal articles related to greenwashing primarily appear and in what quantity, thereby investigating the importance of the topic; additionally, it aims to analyze the quality of the journals where these articles are published. Therefore, Table 3 displays the top 10 journals that most frequently publish articles related to the topic. Regarding the number of published articles, Sustainability - Basel leads with 59 publications, constituting 7.32% of the 807 publications. The Business Strategy and Ethics journal, classified as Q1 and having the highest impact factor, ranks third with 35 publications. These top ten journals contribute to 28.50% of the articles in the database. The table also highlights that the journals belong to Q1 and Q2 quartiles, with impact factors ranging from 2.7 (Environmental Communication: A Journal of Nature and Culture) as the lowest to 13.4 (Business Strategy and The Environment)

as the highest among the top 10 journals with the most publications. Greenwashing remains a pertinent and trending topic for exploration in these journals.

Table 3. Top 10 most active journals in the greenwashing topic

Rank	Journal	Record count	%	Impact factor (2022)	Journal Quartile	Country
1	Sustainability – Basel	59	7.32	3.9	Q2	Switzerland
2	Journal of Cleaner Production	36	4.46	11.1	Q1	United Kingdom
3	Business Strategy and The Environment	35	4.34	13.4	Q1	United Kingdom
4	Journal of Business Ethics	28	3.46	6.1	Q1	Netherlands
5	Corporate Social Responsibility and Environmental Management	20	2.47	9.8	Q1	United Kingdom
6	Environment Development and Sustainability	13	1.61	4.9	Q2	Netherlands
7	Environmental Communication A Journal of Nature and Culture	10	1.24	2.7	Q2	United Kingdom
8	Finance Research Letters	10	1.24	10.4	Q1	Netherlands
9	Journal of Sustainable Finance & Investment	10	1.24	4.3	Q1	United Kingdom
10	Energy Economics	9	1.12	12.8	Q1	Netherlands

Source: own edition based on Web of Science database

Co-citation analysis relies on the volume of published documents, the frequency of citations those documents receive, and the overall link strength associated with those citations. The table generated through this analysis ranks sources or journals within the discipline (Znidaršič *et al.* 2021). Additionally, co-citation analysis enables an examination of the consensus regarding the collective research agenda in a specific research field or journal. It facilitates the identification of emerging trends over time. A co-citation is registered when two articles reference the same source (Lazer *et al.* 2009). When the cited literature was analyzed for journal co-citations, the minimum number of citations of a source was 20; of the 18499 sources, 333 met the threshold. Table 4. supports the findings presented in Figure 3. The results indicate that an article published in the most prolific journals is likely to be cited within articles published in the journals listed in Table 3. As shown in Table 3 of co-cited journals, five of the ten most productive journals stand out. This suggests that these five journals may serve as the leading specialist journals in the research field of greenwashing.

Table 4. Top 10 co-cited journals

Rank	Journal	Citations	Total link strength
1	Journal of Business Ethics	2612	125402
2	Journal of Cleaner Production	1506	69391
3	Business Strategy and The Environment	973	55295
4	Sustainability	625	26326
5	Corporate Social Responsibility and Environmental Management	522	31509
6	Journal of Business Research	519	27657
7	Academy of Management Review	489	28182
8	Strategic Management Journal	454	28668
9	Academy of Management Journal	447	26587
10	Journal of Advertising	348	15016

Source: own edition based on Web of Science database

The leading role of the Journal of Business Ethics is also because four of the ten most cited authors (Laufer 2003; Parguel *et al.* 2011; Walker and Wan 2012; Chen and Chang 2013) have published their work in this journal.

In Figure 3, five clusters can be distinguished based on the analysis conducted with VOSviewer. The first cluster (in red - 100 items) includes environmental, policy sustainability, and energy journals, encompassing the Journal of Cleaner Production and Sustainability. The second cluster (in green - 97 items) connects to journals covering business, marketing, advertisement, consumer behavior, and psychology, including the Business Strategy and the Environment, Journal of Business Research, Strategic Management Journal, and Journal of Advertising. The third cluster (in blue - 69 items) is associated with journals focusing on accounting, finance, and corporate social responsibility, which includes the Journal of Business Ethics, Corporate Social Responsibility, and Environmental Management. The fourth category (in yellow - 49 items) consists of journals related to management, business, and organization, with the most cited being the Academy of Management Review and the Academy of Management Journal. The fifth cluster (in purple - 18 items) primarily concentrates on journals with a production theme.

Figure 3. Journals co-citation analysis
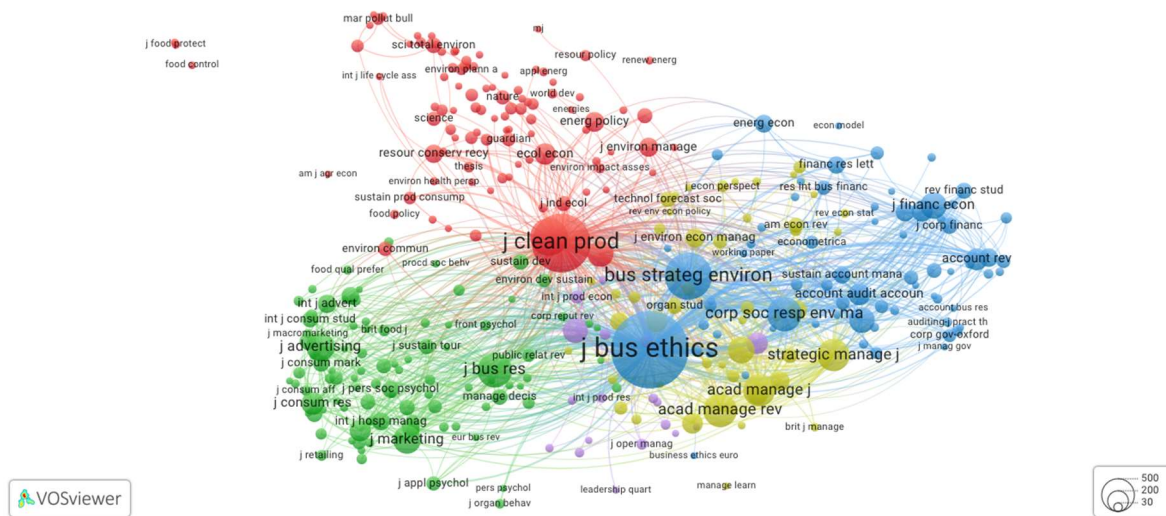
Source: Authors' research via VOS Viewer
Primary data: WOS

In the case of these five clusters, the red (environment and policy) and blue clusters (finance, CSR, and accounting) are closest to each other, while the yellow (management and business strategy) and purple (operation and production) clusters are connected beneath the prominent red and blue clusters. The second-largest cluster, mainly listing journals related to marketing and advertising themes, has a relatively distant connection to the other clusters but is close regarding scientific connections within the field. These results also reflect that greenwashing is a highly complex, multidisciplinary topic deserving the attention of researchers, as evidenced by the number of citations.

3.4. Influential Authors and Documents

In the author collaboration network, from the 807 articles 2021 different authors wrote at least one article, 149 authors have published at least two articles, and 39 authors have contributed to at least three or more articles. For each of the 39 authors, the total strength of the co-authorship links with other authors was calculated. The authors with the greatest total link strength were selected. Based on this some of the 39 items (author) are not connected to each other, so that means there are no strong co-authorship relations between the authors regarding greenwashing; hence 2021 authors with 807 publications laid the foundations, which is linked to many different areas and concern (management, marketing, production, public policies and environment) (Montero-Navarro *et al.* 2021), and in other from another point of view, partly due to the novelty of the topic, which has not yet allowed the development of cooperation.

At the same time, it is important to see which authors have written the most articles on the subject and published the works that have received the most citations. To identify the most productive authors on the subject, was first looked at who had written the most publications. As can be seen in Table 5, Zhang the first with 10 publications written in five in 2022 and five in 2023; these ten publications during the two years got 214 citations.

Connecting to greenwashing, Seele and Lyon are the next with five and five publications, but of the most productive authors, Lyon got the most citations (1454).

Table 5. Top 10 most productive author

Rank	Name of author	Number of publications	Citations	Country
1	Zhang, DY	10	214	China
2	Seele, P.	5	280	Switzerland
3	Lyon, T.P.	5	1454	USA
4	Wang, G	4	65	China
5	Castro, I.B.	4	128	Brazil
6	DU, X.Q.	4	271	China
7	Testa, F.	4	382	Italy
8	Montgomery A. W.	4	569	Canada
9	Wang, W.	4	21	China
10	Matthes, J.	4	180	Austria

Source: own edition based on Web of Science database

To indicate the most cited source, the Web of Science Core Collection data was used with the search strategy indicated in the methodology. Among the ten most cited documents (Table 5), the earliest one is authored by Laufer and dates back to 2003, while the most recent is from 2016 (Marquis, Toffel and Zhou). A total of 6 works from the list originate from authors in the USA, further affirming the prominence of the USA in the field. There are 535 citation differences between the first (Delmas and Burbano 2011) and the tenth (Mahoney, Thorne, Cecil, and LaGore 2013) most cited publication, which can be considered a relatively large distinction. According to WoS Categories, these publications mainly pertain to the topics of Business, Management, and Ethics, with a minor focus on Economy, Finance, and Environment. Concerning research areas, these publications fall into the categories of Business & Economics and Social Sciences. When examining Citation topics, most of these publications are related to the Corporate Social Responsibility theme, except for Chen and Chang's publication from 2013. Web of Science offers the most reliable method for assessing an article's impact on the scholarly community. Using the Citing items by classification provides a breakdown of how an article has been referenced, relying on available citation context data and snippets from citing items. The citing item by classification is broken down into five parts: background, basis, discussion, support, and difference.

In most cases, the most cited documents were mentioned in other publications in the background section (834) and the discussion section (346), which guides a study within the field of science. In the case of the discussion section, references were also included, mentioning them because the current study was discussed in more detail. Regarding the basis, 99 mentions of datasets, methods, concepts, and ideas were being utilized, directly taken from the documents mentioned earlier by authors for their work or upon which their work was grounded. However, these documents were mentioned 33 times as supporting references, indicating they exhibit similar results to the respective study. This suggests methodological similarities or, in some cases, the replication of results. Only one instance of divergent references was found concerning Walker and Wan (2012), where the citing study claims that they have different results.

Bibliographic coupling is a technique for measuring similarity that employs citation analysis to establish a relationship between documents based on their citations. This phenomenon occurs when two pieces of literature refer to a common third work in their reference lists, indicating a likelihood that the two works are dealing with a related subject. Documents are deemed to be bibliographically coupled if they both cite one or more shared references. The "coupling strength" level between two documents is greater when they have more citations in common with other documents. (Boyack and Klavans 2010; Yan and Ding 2012; Kleminski et al. 2022). The bibliographic coupling with a unit of analysis (document) was organized to find the field's most significant publication. The minimum number of citations per document is 0, but in this case, 100 citations per document were settled as the threshold for each publication to be chosen for the analysis to ensure that the most relevant documents are targeted for analysis. Out of the total 807 publications, 41 met the minimum criteria, and these documents are ranked based on the most muscular total link strength and citations. Lyon and Montgomery (2015): The Means and End of Greenwash in the Organization & Environment journal, with 357 citations and a total link strength of 211, was the strongest publication.

Table 6. Top ten most cited document

Rank	Title	Authors	Number of Citations	Year of Publish	Country	Journal
1	The Drivers of Greenwashing	Delmas, M.A.; Burbano, V.C.	825	2011	USA	California Management Review
2	Social accountability and corporate greenwashing	Laufer, W.S.	658	2003	USA	Journal of Business Ethics
3	Greenwash: Corporate Environmental Disclosure Under Threat of Audit	Lyon, T.P.; Maxwell, J.W.	540	2011	USA	Journal of Economics & Management Strategy
4	Greenwash and Green Trust: The Mediation Effects of Green Consumer Confusion and Green Perceived Risk	Chen, Y.S.; Chang C.H.	421	2013	Taiwan (China)	Journal of Business Ethics
5	How Sustainability Ratings Might Deter 'Greenwashing': A Closer Look at Ethical Corporate Communication	Parguel, B.; Benoît-Moreau, F.; Larceneux, F.	379	2011	France	Journal of Business Ethics
6	Corporate social responsibility in the banking industry: Motives and financial performance	Wu, M.W.; Shen, C.H.	377	2013	Taiwan (China)	Journal of Banking & Finance
7	The Means and End of Greenwash	Lyon, T.P.; Montgomer, A.W.	361	2015	USA	Organization & Environment
8	The Harm of Symbolic Actions and Green-Washing: Corporate Actions and Communications on Environmental Performance and Their Financial Implications	Walker, K.; Wan, F.	344	2012	Canada	Journal of Business Ethics
9	Scrutiny, Norms, and Selective Disclosure: A Global Study of Greenwashing	Marquis,C.; Toffel, M.W.; Zhou, Y.H.	336	2016	USA	Organization Science
10	A research notes on standalone corporate social responsibility reports: Signalling or greenwashing?	Mahoney, L.S.; Thorne, L.; Cecil, L.; LaGore, W.	290	2013	USA	Critical Perspectives on Accounting

Source: own edition based on Web of Science database

The second strongest was Seele and Gatti (2017), with 161 citations and 192 total link strength, "Greenwashing Revisited: In Search of a Typology and Accusation-Based Definition Incorporating Legitimacy Strategies" in the Business Strategy and the Environment. The third one was by Torelli, Balluchi, and Lazzini (2020), "Greenwashing and environmental communication: Effects on stakeholders' perceptions", with 116 citations and 185 total link strength (see on Figure 4).

Figure 4. Bibliographic coupling of documents
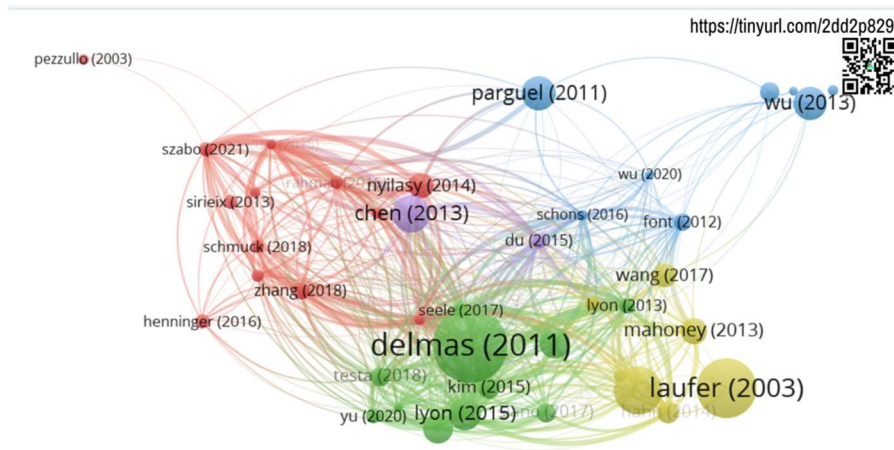
Of the five clusters, the first one, represented by red, is the largest cluster, with 13 documents primarily aggregating publications that investigate the effects of greenwashing. The second cluster (green) consists of 11 documents, mainly comprising theoretical foundational works such as those by Delmas and Burbano (2011) and Lyon and Maxwell (2015). The third (blue) cluster contains eight documents concentrating on corporate social responsibility, and the fourth (yellow) cluster has seven documents, predominantly focusing on works related to corporate social responsibility with more focus on the finance area. The fifth (purple) cluster has two elements and can be considered a small group of studies examining the ethical aspects of greenwashing.

3.5. Keyword Analysis

Keywords can encapsulate the core idea of an academic article, and keyword co-occurrence networks enable an in-depth analysis of these articles (Conway 2009; Corrin 2022). Co-occurrence analysis entails establishing connections between keywords that are simultaneously present in a document's title, abstract, or list of keywords (Zupic & Cater 2015). This technique was utilized to uncover thematic groupings, emerging patterns, and significant subjects pertinent to the realm of greenwashing. The fundamental justification for employing co-occurrence is the assumption that the frequent co-occurrence of terms within a body of text signifies thematic or conceptual interconnectedness (Zupic & Cater 2015). The keywords provided by authors and the keyword plus of the papers that occurred more than ten times in all the documents were calculated to the WOS Core Collection data registered with the "full counting" method in the final analysis, and duplications and plurals were corrected in the thesaurus file. Of the 3574 keywords, 110 met the threshold.

Figure 5. Co-occurrence networks of keywords
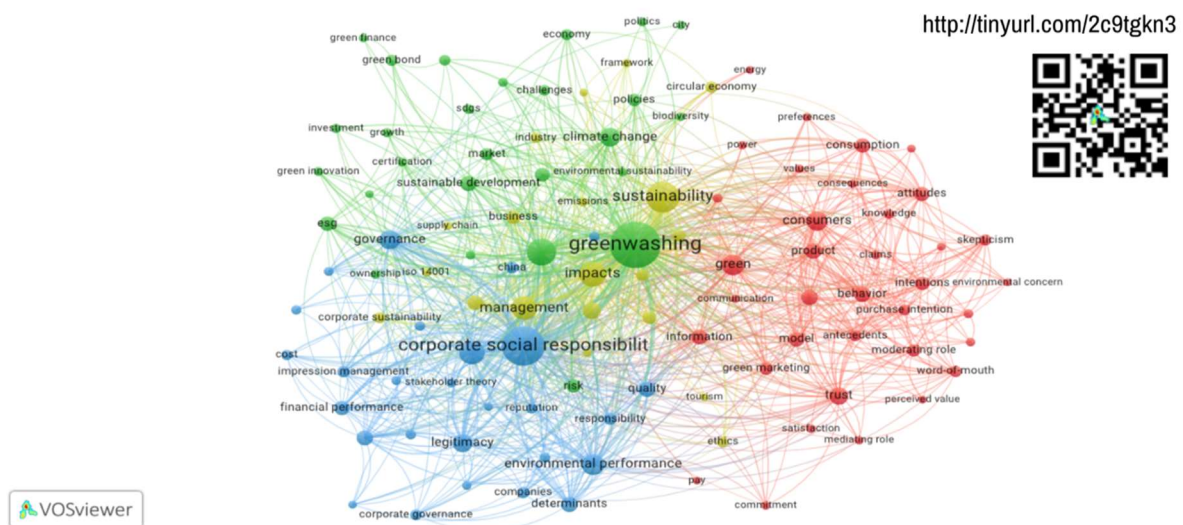
The minimum keyword set (ten) also helped to include more prevalent keywords in the chosen database, and the cleaning of the data using the thesaurus file also contributed to better keyword transparency. The nodes' size signifies the occurrence frequency, while the curves between the nodes represent their co-occurrence within the same publication (Cheng *et al.* 2018).

The shorter the distance between two nodes, the larger the co-occurrences of the two keywords (The font size represents the frequency of occurrence). The keywords that appeared (Figure 5) most were "greenwashing" (occurrence 352 times, total link strength 1580), corporate social responsibility (occurrence 249 times, total link strength 1210), sustainability (occurrence 154 times, total link strength 655), performance (occurrence 116 times, total link strength 626) and impact (occurrence 103 times, total link strength 575).

Figure 5 displays four clusters (red, green, blue, and yellow), indicating the interconnectedness of these words. The occurrence of related words and concepts within these clusters is presented in Table 7.

Table 7. The four keyword cluster items

Cluster 1 – Red	Cluster 2 - Green	Cluster 3 - Blue	Cluster 4 - Yellow
antecedents	biodiversity	accountability	business
attitudes	certification	adoption	circular economy
behavior	challenges	China	corporate sustainability
claims	city	companies	diversity
commitment	climate changes	corporate governance	emissions
communication	city	corporate social responsibility	environment
consequences	climate change	cost	ethics
consumers	competition	determinants	firm
consumption	economy	disclosure	framework
energy	environmental	economic performance	impacts
environmental concern	policy	environmental disclosure	industry
green	environmental	environmental performance	iso 14001
green advertising	sustainability	firm performance	management
green marketing	ESG	governance	organizations
information	green bond	impression management	perspective
intentions	green finance	legitimacy	strategies
involvement	green innovation	media	supply chain
knowledge	greenwashing	pollution	supply chain
mediating role	growth	quality	management
model	innovation	reputation	sustainability
moderating role	investment	responsibility	tourism
pay	market	self-regulation	
perceived risk	ownership	stakeholder engagement	
perceived value	performance	stakeholder theory	
perception	policies	sustainability reporting	
power	politics	transparency	
preferences	regulation		
product	risk		
purchase intention	sustainable-development goals		
satisfaction	sustainable development		
skepticism	sustainable finance		
social media			
trust			
values			
willingness to pay.			
word of mouth			

Source: own edition based on Vosviewer software

As evident, the "greenwashing" node holds a central position in the network, highlighting its proximity to the rest of the nodes and, therefore, the current relevance of the topic. The first red cluster encompasses 27 elements and primarily includes keywords related to consumers and marketing. The most cited keywords in this cluster are green (69), consumers (60), and trust (49). In terms of the number of elements, this is the largest cluster, containing 36 elements, but in terms of citations and connections, it represents a sprawling, fragmented area. This is due, on the one hand, to the diversity and complexity of consumer behavior and purchasing decisions, and it also indicates that research in this area has yet to strengthen to the same extent. The second green cluster contains 27 elements, with the most cited concepts being greenwashing (352), performance (116), and climate

change (57). Greenwashing and performance are central in this cluster, while the other keywords show significantly more diverse and distant connections. Terms such as climate change, environmental policy, environmental sustainability, ESG, green finance, green innovation, policies, politics, regulation, risk, and sustainable development goals can be summarized as governance and legitimacy, with a central focus on political regulation and its impact on greenwashing.

The blue cluster also consists of 27 elements, with the most cited concepts in this cluster being corporate social responsibility (259), centrally positioned, along with disclosure (89), and environmental performance (71). This cluster can be interpreted as related to corporate and stakeholder terms. Its connections are primarily with the blue (governance) and yellow clusters. The yellow cluster, which includes 20 elements, holds a central position in the network, showing proximity to the rest of the nodes. This cluster can be characterized as impacts and environmental management, with the most occurrences of sustainability (154), impacts (103), and management (90) keywords.

Figure 6. Overlay - Temporal visualization of keywords

http://tinyurl.com/2c9tgkn3
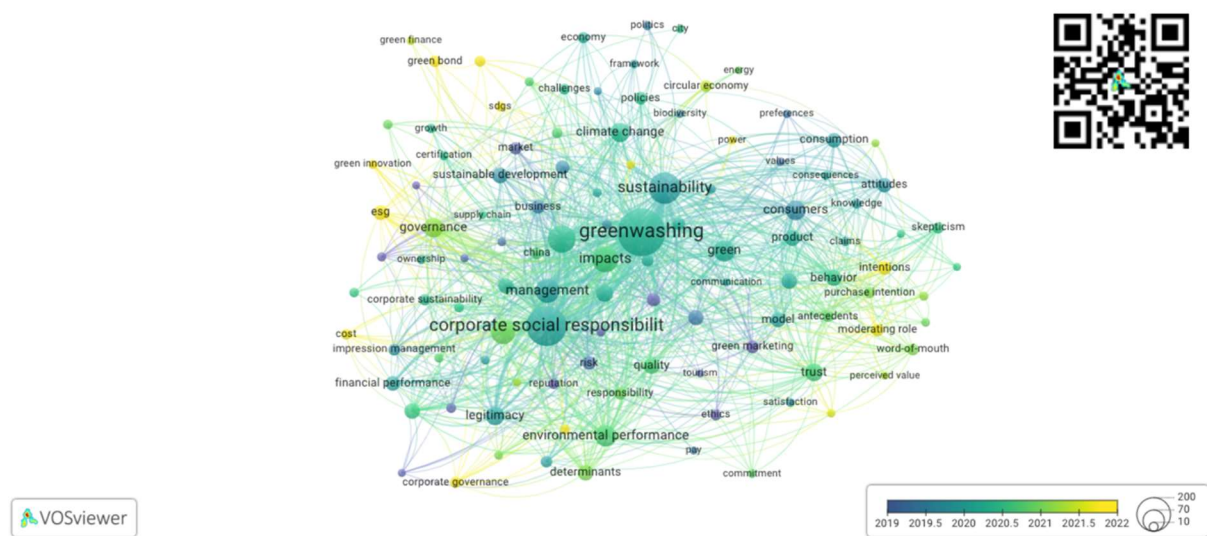
Source: Authors' research via VOS Viewer
Primary data: WOS

Figure 6 offers a temporal visualization of shifting research foci. Most of the research, 77.69%, falls from 2019 through 2023, as demonstrated and reflected in the figure. It becomes evident that studies on the topic initially revolved around keywords such as ethics, green marketing, reputation, and competition. Circles colored yellow indicate a newer year. Yellow keywords include "green bond", "green innovation", "ESG", "cost", "intention", "moderating role", "corporate governance", and "sustainable development goals – SDGs". Therefore, it becomes an opportunity for future research on these keywords. Consequently, the theme of greenwashing is shifting from the perspectives of consumers and corporate social responsibility towards governance, finance, and audit.

Further Research

Based on the Web of Science database and the keyword search results, the following future research opportunities were summarized.

Future investigations into greenwashing should deeply explore the changing trends and obstacles encountered within the realms of sustainability and corporate responsibility. It is crucial to pay specific attention to examining the effectiveness of existing regulatory frameworks in addressing greenwashing practices and proposing potential improvements. Moreover, understanding consumer attitudes and behaviors towards greenwashing is crucial, particularly given today's growing environmental consciousness. This entails delving into the influence of greenwashing across various industries and evaluating strategies to cultivate genuine sustainable behaviors within companies.

Research efforts should also concentrate on the impact of emerging technologies like blockchain and artificial intelligence in promoting transparency and credibility in sustainability claims. An essential aspect to

explore is how these technologies can provide innovative solutions to tackle greenwashing effectively. Additionally, future studies should consider adopting a longitudinal approach to capture temporal changes, considering the rapidly evolving landscape of sustainability trends and environmental issues. It is important to advocate for comprehensive information on emerging continents, despite existing critical issues that demand immediate attention. Comparative analyses across countries and continents can shed light on how diverse cultures and economic conditions lead to different attitudes towards greenwashing. It is imperative to develop a methodology that allows external organizations or businesses to assess the presence of greenwashing in their operations and determine its extent.

Future research endeavors could directly examine the circumstances under which customers are more or less likely to detect discrepancies between corporate social responsibility (CSR) policies and their implementation. A critical distinction should be made between material and immaterial dimensions of CSR, exploring potential cross-effects on how perceived greenwashing on one issue may influence perceptions of corporate hypocrisy on other CSR issues. Delving into the financial ramifications of greenwashing and its impact on company performance and economic outcomes is also essential. Methodologies should be devised to quantify the economic consequences of greenwashing on industries and financial markets.

Evaluating the efficacy of financial disclosures in preventing greenwashing and fostering genuine corporate sustainability is crucial. Furthermore, studying the influence of greenwashing on environmental management practices within organizations is paramount. Developing a methodological framework to evaluate the environmental impact of greenwashing across different industries is necessary. It is also vital to examine the role of environmental certifications in mitigating greenwashing and encouraging authentic sustainable practices. Exploring various themes in sustainable development, environmental impact, CSR, climate change, certifications, emission control, green consumerism, green satisfaction, consumer green attitudes, brownwashing, individual perceptions of greenwashing and hypocrisy at the individual level offers multiple research possibilities.

Another potential future perspective could be investigating the impact of greenwashing on gender and different generations.

Conclusions

This study focuses on the bibliometric analysis of greenwashing-related publications in international scientific journals. It aims to identify and visualize the intellectual landscape of the field, publishing trends, and patterns in greenwashing from 2003 to 2023 by evaluating the frequency of citations, the country distributions of the nations, most cited authors, key journals in the topic, existing or non-existing authorship patterns, main terms, and most used keywords. Greenwashing is a multiplex and challenging to understand barrier to achieving or improving sustainability in developed and developing countries. To achieve the set goal, six research questions were formulated. To answer these, the analysis included 807 publications filtered from the Web of Science database, which were analyzed using the Vosviewer software. The response to the first research question (RQ1) revealed three main phases in publication trends related to greenwashing from 2003 to 2023. These include a slow, emerging growth (P1), followed by a fluctuating growth (P2), and the third period (P3), indicating stable exponential growth. This confirms the relevance of the topic and forecasts further expected growth.

The results of the research question about the geographical distribution of scientific publications in the examined field of greenwashing (RQ2) revealed that, from the perspective of the study, the United States America, China, United Kingdom, Canada, Australia, Germany, Italy, Spain, France, and the Netherlands have significant contributions with substantial publications and international publication networks. Most research, especially in business sciences, originates in the United States, America, and China, given the influential role of numerous prestigious educational institutions and research centers. The central roles of the United Kingdom and the USA are evident in the co-authorship network of countries. At the same time, China, leading both in the number of publications and citations, is relatively positioned towards the periphery. Countries located at the outer periphery of the emerging clusters have looser international publication connections, whereas countries at the cluster centers exhibit stronger scientific research collaboration. The response to the question also outlined the prominent roles of the USA, China, and primarily Southern-Western Europe on the subject; meanwhile, other emerging countries and continents or continental parts are notably absent from the list.

The evaluation of a particular topic is significantly influenced by the ranking of journals since the higher the ranking and indexing of a journal, the more "valuable" the topics and articles published in it are considered. In response to the question (RQ3) regarding which journals primarily feature articles on the topic, these articles appear in scientifically diverse journals. According to the Scimago Journal ranking, with three exceptions - Sustainability-Basel, Environment Development and Sustainability, and Environmental Communication A Journal

of Nature and Culture - these journals belong to the highest scientific category, namely Q1. The classification of journals of this nature may suggest that research on greenwashing is highly favored, not only by authors but also by journal editors. Furthermore, in the case of co-citation networks of journals, five clusters can be distinguished, supporting the multidisciplinary nature of the topic.

Regarding authorship and collaborative research patterns (RQ4) from the author's perspective, in agreement with other scholars (Montero-Navarro *et al.* 2021; Wang *et al.* 2023), Delmas and Burbano (2011) received the most citations (n=825). In contrast to the results of Montero-Navarro *et al.* (2021) and Santos *et al.* (2023), the author contributing the most publications on the topic is Zhang, with ten publications published in 2022 and 2023. The most co-cited authors are primarily Laufer (total link strength 5742, citation 337), as mentioned by Wang *et al.* (2023), followed by Chen, (total link strength 5587, citation 318), and Delmas (total link strength 4629, citation 265).

Beyond identifying which documents have received the most citations so far, it is worthwhile to observe the primary categories to which they belong. These categories primarily involve clarifying theoretical and conceptual issues and examining the effects of greenwashing. Additionally, the topic strongly emphasizes questions related to corporate social responsibility, extending into the realms of management and finance. All these aspects also entail ethical considerations. Employing bibliographic coupling analysis, five distinct clusters were delineated. The three most expansive clusters are predominantly associated with publications addressing the effects of greenwashing, while the second cluster is characterized by theoretical and foundational works. The third cluster is oriented explicitly toward aspects of corporate social responsibility. An observable trend emerges in the overlay visualization, indicating a transition from foundational theoretical publications to more targeted, multidisciplinary, quantitative, or qualitative research-based publications.

The co-occurrence analysis and the frequency of keyword usage contribute to a better understanding of the topic and thinking about future trends (RQ5). The analysis identified the top five keywords ("greenwashing," "corporate social responsibility," "sustainability," "performance," and "impacts"), indicating which areas are most closely related to greenwashing and in which domain most publications have been produced. Additionally, the four clusters identified by Vosviewer highlight that the treatment of the topic from a marketing and consumer perspective is highly fragmented, emphasizing governance in the green cluster, corporate and performance in the blue cluster, and impacts and management in the yellow cluster. The analysis also reveals a shift towards government regulation and banking-finance.

In line with Wang *et al.* (2023), the research findings also reveal that the multiplicity of the phenomenon of greenwashing results in modular research content. Examining keyword changes indicates an initial achievement of multidisciplinary integration in existing greenwashing research. The study subjects exhibit a complex interplay between macro and micro perspectives, accompanied by a growing diversification across cultural contexts and research regions.

This study aids newcomers and senior scientists in the field by swiftly providing an overview of current research trends. It also assists research institutes and government organizations formulate future research plans through knowledge mapping.

This study, like all other bibliometric analyses, encompasses numerous limitations. Initially, the articles were retrieved on a set date from a singular database. Although WoS stands as one of the most reliable data sources, it must be acknowledged that further relevant papers may be indexed in other databases; hence, forthcoming researchers can broaden their search to alternative data sources, such as Scopus, Open Alex, or Google Scholar, introducing the possibility that some may have been omitted in this analysis. Furthermore, the criteria were to analyze peer-reviewed articles in English, overlooking other languages and forms of work like book chapters, papers in process, early access materials, and editorials. Additionally, only Vosviewer was employed for data analysis, whereas alternative digital bibliometric software tools could have assessed the data differently. Finally, as a distinctive feature of bibliometric techniques, the interpretation of the maps remains subjective to a certain extent. Despite the limitations, the research will aid those interested in the topic in further contemplation and its better unfolding.

Credit Authorship Contribution Statement

Katalin Nagy-Kercsó: Conceptualization, Investigation, Methodology, Project Administration, Software, Formal Analysis, Writing – Original Draft, Data Curation, Visualization.
Enikő Kontor: Conceptualization, Supervision, Review, and Editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of use of generative AI and AI-assisted technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Spatial and Non-linear Dynamics of Environmental Tax, Technology, and Economic Growth on Carbon Dioxide Emissions in OECD Countries

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Abstract: The current study sought to investigate spatial and non-linear dynamics of environmental tax, technology, and economic growth on carbon dioxide emissions in OECD Countries. Guided by STIRPAT as the theoretical framework and using OECD data between 2000 and 2021, the study also used the SAR model to investigate spatial dependence. The STIRPAT model is widely applied in environmental impact assessment to help scholars understand the forces that drive environmental issues. The analysis revealed that only economic growth significantly predicts CO_2 emissions among OECD countries. Both ABAT and E.T. did not significantly affect CO_2 emissions in the OECD countries. The SAR model revealed the presence of spatial dependence. This means other countries with higher emissions are also likely to have neighbours with higher emissions, and vice versa. This means there are spillover effects, where technology advancements and environmental policies in one country or region could influence emissions in other countries, especially neighbouring countries.

Introduction

Air quality is the primary goal and a pathway to sustainable development, even as the world confronts the issue of climate change, especially CO_2 emissions. Developed countries, including those in the OECD, are the highest emitters of CO_2 (Shobande and Asongu 2023; Ghazouani *et al.* 2020). Achieving Sustainable Development Goal 13 (SDG 13) can only be possible when experts and scholars understand the factors that influence CO_2 emissions, especially in the developed world, to provide a basis for developing mitigation strategies (Shobande and Asongu 2023).

Key factors potentially impacting CO_2 emissions in OECD countries include environmental taxes, technology, and economic growth. Environmental taxes discourage activities considered environmentally harmful, such as the use of fossil fuels (Shobande and Asongu 2023; Wisdom, Apollos and Samuel 2022). Technology advancements could play a key role in reducing CO_2 emissions through energy-efficient practices and renewable sources (Ghazouani *et al.* 2020). Even though the relationship between economic growth and CO_2 emissions is complex, it is crucial to be aware that economic growth is associated with increased energy consumption (which means more emissions) (Ghazouani *et al.* 2020). Still, at the same time, it means there are more resources to invest in cleaner technologies.

Apart from investigating these factors, the research will consider the spatial dimension, which will be achieved by investigating the spillover effects. Technology advancements and environmental policies in one country or region could influence emissions in other countries, especially neighboring countries (Apollos and

Samuel 2022). Preliminary research (Ghazouani *et al.* 2020; Shobande and Asongu 2023) suggests that the relationship between the abovementioned factors and CO2 emissions might not be straightforward; studies such as (Shobande and Asongu 2023) suggest that there are thresholds where the effects of these factors become more pronounced, or in some cases, become curvilinear. In the initial stages of economic growth, emissions might increase, but further growth might lead to a decrease (Shobande and Asongu 2023).

The current emission levels in the developed world threaten the environment, and this study seeks to investigate the spatial and non-linear dynamics of the main variables- technology adoption, environmental taxes, and economic growth- to address this problem potentially. Understanding these dynamics will form the basis for policymakers to develop effective strategies that can help mitigate climate change. This study contributes to constructing a theoretical model that will help understand how effective environmental policy is, the role of technology, and economic growth. It also investigates the spatial effects and the non-linear dynamics to provide a comprehensive picture of how these factors influence CO2 emissions.

The novelty of this study lies in its comprehensive, holistic, and integrative approach that combines spatial, as well as non-linear analysis with the aim of uncovering complex relationships and interactions between the predictors of carbon emissions (Deng, You and Wang 2022). By studying the spatial dynamics, this study incorporates geographical variability and utilizes spatial econometric models to facilitate the investigation of spillover effects, as well as the interactions between neighboring countries. In the context of increasing carbon emissions and the threat of climate change, the findings of this study can inform effective environmental policies.

1 Literature Review

1.1 Environmental Taxes, Technology Adoption, and CO2 Emissions

Polluters are encouraged to cut emissions and look for greener options by taxes on pollution. Profit-maximising companies are more motivated to reduce environmental harm by tying it to a fixed cost, similar to other production inputs. In OECD economies, emission trading and ecologically linked taxes are growing (Ivanovski and Hailemariam 2022). Research on the effects of carbon tax regimes on CO2 emissions in several European nations was carried out by Yıldırım D.Ç., Esen Ö., Yıldırım S. (2022). Their empirical research showed that reducing carbon emissions may not be possible using environmental fees. Nan *et al.* (2022) studied the effects of varying carbon pricing on the economy and the environment. According to their research, a higher foundational carbon tax rate can result in more funding allocated to emission reduction initiatives, ultimately contributing to environmental sustainability.

The underlying relationship between transport levies and CO2 emissions reduction in transitioning nations was examined by Jiang and Ma (2021). They found that contrary to common concerns about the detrimental effects on economic expenses and company competitiveness, environmental taxes could cut CO2 emissions. Research also shows that higher environmental levies directly result from improved environmental regulation linked to lower CO2 emissions (Ivanovski and Hailemariam 2022; Wang *et al.* 2024) looked at the impact of environmental tax rates on CO2 emissions as well as the efficacy of environmental policy. They found that CO2 emissions and tax rates were negatively correlated, suggesting that higher tax rates would aid in reducing emissions.

Since businesses and consumers are forced to find new, greener solutions in reaction to the price placed on pollution, environmental taxes can serve as important catalysts for innovation (Ivanovski and Hailemariam 2022). These incentives additionally render it more profitable for companies to engage in research and development (R&D) to produce consumer goods and technologies with less environmental impact, whether the inventor is a third party or the polluter. A more balanced combination of end-of-pipe abatement methods and greener production process innovation is encouraged by the broad range of actions that taxation can prompt (Nan *et al.* 2022). The existence of environmentally relevant taxation increases incentives to introduce the newest technology that has previously been developed elsewhere, even for companies that lack the means or desire to engage in formalized R&D operations.

A plethora of literature investigating the relationship between environmental taxes and CO2 emissions has contributed to the literature in this field, providing a good theoretical and practical understanding of this relationship (Al Shammre *et al.* 2023; Ghazouani *et al.* 2020; Ulucak, Danish and Kassouri 2020). These investigations revealed the connection between E.T. and carbon dioxide emissions, giving us a deeper understanding of the effectiveness of these policies. For example, Al Shammre *et al.* (2023) investigated the impact of economic ambiguity (EPU) on CO2 discharges in Germany and considered the direct and indirect impacts of environmental policies. Shobande and Asongu (2023) also found a correlation between carbon emissions and environmental costs through the GMM system and quintile regression method. Ulucak, Danish and

Kassouri (2020) scrutinized the economic and ecological consequences of various carbon pricing mechanisms and argued that increasing carbon taxes could allocate more resources to mitigation, thus supporting them all. Wisdom, Apollos and Samuel (2022) stated that there is no adequate research on the impact of carbon charges on delays in meeting the desires of management professionals, in particular in developing nations. It has been released in Australia. In his observation on the impact of the Swedish carbon pricing policy, POLAT (2019) investigated the effectiveness of this coverage in restricting carbon dioxide emissions and emphasized the environmental advantages of carbon tax agencies.

1.2 Economic Growth and CO2 Emissions

Similarly, Leitão, Ferreira and Santibanez-González (2022) evaluated how environmental innovation helped the G20 economies reduce their CO2 emissions. They discovered that utilizing green technologies in production led to a decrease in CO2 emissions. Renewable energy facilitates a more sustainable world, the efficient use of natural resources, and technological improvements in the energy industry (Ivanovski and Hailemariam 2022). Bai *et al.* (2023) discovered that implementing energy innovations and energy-saving technologies can affect the sustainability of the environment. When paired with technology advancements, eco-innovation can improve environmental sustainability and reduce carbon emissions (Chen and Hu 2022)

Hussain, Khan and Shaheen (2022) highlight the significance of low-carbon technologies to encourage environmentally friendly growth among the OECD member countries. The authors claim that using energy-efficient equipment would facilitate transitioning from traditional to clean, green energy sources. Consequently, there is an inverse relationship between eco-innovation and carbon dioxide generation. Environmental innovation contributes to decreasing CO2 emissions by advancing energy efficiency, renewable energy, and clean technologies (Espoir and Sunge 2021). Laws and policies that support R&D spending and provide financial incentives for environmentally friendly technologies can help accelerate the implementation of sustainable practices to tackle the carbon emissions problem (Leitão, Ferreira and Santibanez-González 2022). Eco-innovation goes beyond technological advancements and incorporates changes to business structures and customer behaviour to impact environmental sustainability positively.

1.3 Spatial Spillover Effects of Environmental Taxation, Technology Adoption, and Economic Growth

Although carbon emissions are produced locally, their effects are felt throughout areas and communities, even beyond national boundaries. When a nation chooses to transition to a more environmentally friendly energy mix by adding more renewable energy, the impacts are not only regional but also impact the emissions of neighbouring economies (Jiang and Ma 2021). Since expanding renewable energy production requires significant investments, international cooperation may be essential to enhancing the quality of the environment throughout entire regions. Furthermore, even in ecologically friendly locations, local thinning may not be effective because of the impact of close economies' emissions on neighboring countries (Chen and Hu 2022). Climate catastrophes have significant financial ramifications, including annual damage costs from disasters that reach billions of dollars, adaptation costs linked to reinforcement and protection, and mitigation costs linked to decarbonization (Nerudová).

According to research, FDI has conflicting effects on the carbon footprint of the host nation due to its ability to increase economic activity scale, alter the structural makeup of that activity, and introduce new production processes (Jiang and Ma 2021). When considered separately, the scale effect is predicted to result in higher carbon emissions since growing economies imply higher production and, thus, higher emissions. It is anticipated that the technique effect—a shift in production processes brought about by FDI influx and technology transfer from foreign to domestic firms—will assist in disseminating less polluting technologies and, hence, lower emissions (Chen and Hu 2022). The composition effect is linked to FDI-driven changes in industrial structure, and the degree to which a country has specialized in a particular production modality will determine how it affects emissions. A change in the direction of services driven by FDI would be linked to lower emissions, whereas a shift in the direction of heavy manufacturing would worsen the carbon footprint of the host nation (Jiang and Ma 2021; Sun and Razzaq 2022). These diverse consequences support the ways that FDI affects carbon emissions.

2 Materials and Methods

2.1 Model Specification

The STIRPAT model, cited by York, Rosa and Dietz (2003), is the theoretical framework that informed the model specification in this study. This model is widely applied in environmental impact assessment to help scholars understand the forces that drive environmental issues. The construction of this model is as follows:

I = $\alpha P^b A^c T^d$, with I representing the environmental impact, α a constant term, P the size of the population, A economic wealth of affluence, and T the technological level. The letters b, c, and d are exponents that will be estimated using regression analysis.

To eliminate heteroscedasticity, the variables are written in logarithmic forms as follows:

Ln I = α + b ln (P_{it}) + c ln (A_{it}) + d ln (T_{it}) + e_{it} .....(i), where i represents the country and t represents the year, and e is the error term.

Based on the above model, we can develop models that will help in answering the research question by investigating the factors that affect CO2 emissions.

$LnCO2_{it}$ =αi + $\beta 1 In ET_{it-1}$ + $\beta 2 In GDP_{it}$ + $\beta 3 lnT_{it}$ + e_{it} .....(ii), where LnCO2 is air quality, E.T. is environmental tax, GDP is economic growth, and T is technology.

To incorporate the proxies for the variables in equation (ii), we have

$LnCO2_{it}$ =αi + $\beta 1 In ET_{it-1}$ + $\beta 2 In GDP_{it}$ + $\beta 3 ln PAT_{it}$ + $\beta 4 ln ABAT_{it}$ +e_{it} .....(iii), where PAT is patents and innovations and ABAT is air pollution abatement technology, which as the proxies of technology.

To reduce the potential endogeneity concerns during econometric analysis, the environmental tax variable is lagged by one year. Multicollinearity is also a potential problem, and we use the variance inflation factor (VIF) to identify this issue in Stata. Once the highly correlated variables have been identified, one is removed, the variables may be combined, or the data is transformed.

2.2 Spatial Econometric Model

This study also investigates a spatial component in the data. This means that it investigates the idea that data points influence each other based on location and are not independent. This means we move beyond the traditional regression to incorporate a spatial component in the model. Spatial autocorrelation and spatial heterogeneity are the two types of spatial dependence, and the model types for these are the spatial autoregressive model (SAR) and Spatial error model (SEM).

2.3 Variable Description and Data Source

The source of the data was OECD Data (data.oecd.org). The period covered was between 2000 and 2001. This period was selected based on data availability. Table 1 shows the variables and their descriptions.

Table 1. Variable Description

Variable	Description
CO2	Carbon dioxide emissions in a given country in the OECD
ABAT	Abatement technologies
PAT	Patents for technological innovations
E.T.	Environmental taxes (taxes applied to discourage high-emission activities)
GDP	Gross domestic product of a country, showing a country's economic growth

3 Results and Discussion

A multicollinearity test is performed on the data. The criterion for highly correlated variables is VIF <1 or >10, and such a variable is LNPAT (patents) (VIF =14.4), and as such, this variable is excluded from the model. This is shown in Table 2.

Table 2. Multicollinearity

Variable	VIF	1/VIF
LNPAT	14.4	0.069458
LNGDP	9.78	0.102267
LNABAT	9.7	0.103082
lagLNET	8.34	0.119871
Mean VIF	10.55	

A high R squared of 0.8475 suggests that the independent variables explain 84.75% of emissions in the OECD, and with Prob > F < 0.05, this model can significantly predict CO2 emissions. Regression analysis reveals that

only economic growth is a significant predictor of CO2 emissions among OECD countries (P <0.05), with both ABAT and E.T. showing non-significance (p>0.05). This is shown in Table 3.

Table 3. Regression analysis

regress LNCO2	LNABAT lagLNET LNGDP					
Source	S.S. df M.S.			Number of obs		824
				F (3, 820)		1519.1
Model	1772.79974	3 590.933248		Prob > F		0
Residual	318.982341	820 .389002854		R-squared		0.8475
				Adj R-squared		0.8469
Total	2091.78208	823 2.54165502		Root MSE		0.6237
LNCO2	Coef. Std. Err.	T	P>t	[95% Conf.	Interval]	
LNABAT	.0022427 .0187415	0.12	0.905	-0.03454	0.03903	
lagLNET	.0021067 .0398509	0.05	0.958	-0.07612	0.080329	
LNGDP	.892504 .038715	23.05	0	0.816512	0.968496	
_cons	-12.24341 .7602211	-16.11	0	-13.7356	-10.7512	

3.1 Spatial Econometric Tests

Figure1 summarizes the behavior of all the key variables in the study.

Table 4. SAR model

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*************************************************************************
Regression analysis with spatial autoregressive errors (SAR)
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**SAR model                         Regression with spregress**

**Dep. Variable:  lnco2**                    **Robust**
**R-squared:      0.8247**                   **Time series ols**
**Adjusted R-squared: 0.8093**
**AIC:               -123.45**                          **White
heteroskedasticity test: Prob > chi2 = 0.23**

**Coef.            Std. Err.         z        P>|z|            [95%
Conf. Interval]**
-----------------------------------------------------------------------
ln_abatement     -0.2143    0.0312    -6.87    0.0000    [-0.2752,-0.1534]
lgdp              0.1472    0.0289     5.09    0.0000    [0.0909,0.2035]
lnpaten           0.0821    0.0197     4.17    0.0000    [0.0434,0.1208]
lnET             -0.0921    0.0297     5.27    0.0000    [0.0834,0.4208]
_sp rho           0.3214    0.0987     3.26    0.0011    [0.1284,0.5144]

**Omega**                        0.1753    0.0421     4.16    0.0000

**Log likelihood**              -59.7250

**estat sestat**
**LM test for no spatial dependence**
              chi2(1)        =    10.56    Prob > chi2 = 0.0011
**Wald test for no spatial dependence**
              chi2(1)        =    11.43    Prob > chi2 = 0.0007
**Breusch-Pagan LM test for heteroskedasticity**
              chi2(1)        =     1.34    Prob > chi2 = 0.2473
*************************************************************************
**Note:** Robust standard errors are used.
```

To capture SAR, a dependent variable (CO2 emissions) in one country is influenced by the levels of CO2 emissions in other countries within the OECD as well as outside of the OECD. The general representation of the equation is as follows:

$Y_i = \rho * W * Y_i + \beta X_i + \varepsilon_i,$ where Y_i is the dependent variable (CO2 emissions) for a given country, while ρ is the spatial autoregressive coefficient, W is the spatial weights matrix, and $W * Y_i$ is the spatial lag term. Also, β represents the vector of coefficients of the predictors or independent variables, while X_i is the vector of the dependent variables for various countries. ε_i is the error term.

The SAR model was estimated using the *spregress* command. Table 4 shows a negative and significant relationship between abatement technology and CO2 emissions, suggesting that emissions are reduced with higher abatement (beta = -0.2143, p-value <0.05). There was also a positive significant relationship between the economic growth of a country and its CO2 emissions, indicating that when economies grow, their emissions are also likely to increase. The variable PAT (technology and patents) showed a positive and significant relationship with CO2 emissions (B =0.0821, p <0.05), which suggested that technological innovation is associated with higher CO2 emissions. Environmental taxes could effectively reduce CO2 emissions, as they showed a negative and significant relationship with CO2 emissions (Beta = -0.0921, p <0.05). The spatial autoregressive coefficient (sp rho = 0.3214, p <0.05) indicates spatial dependence.

Figure 2. Visualization of the variables
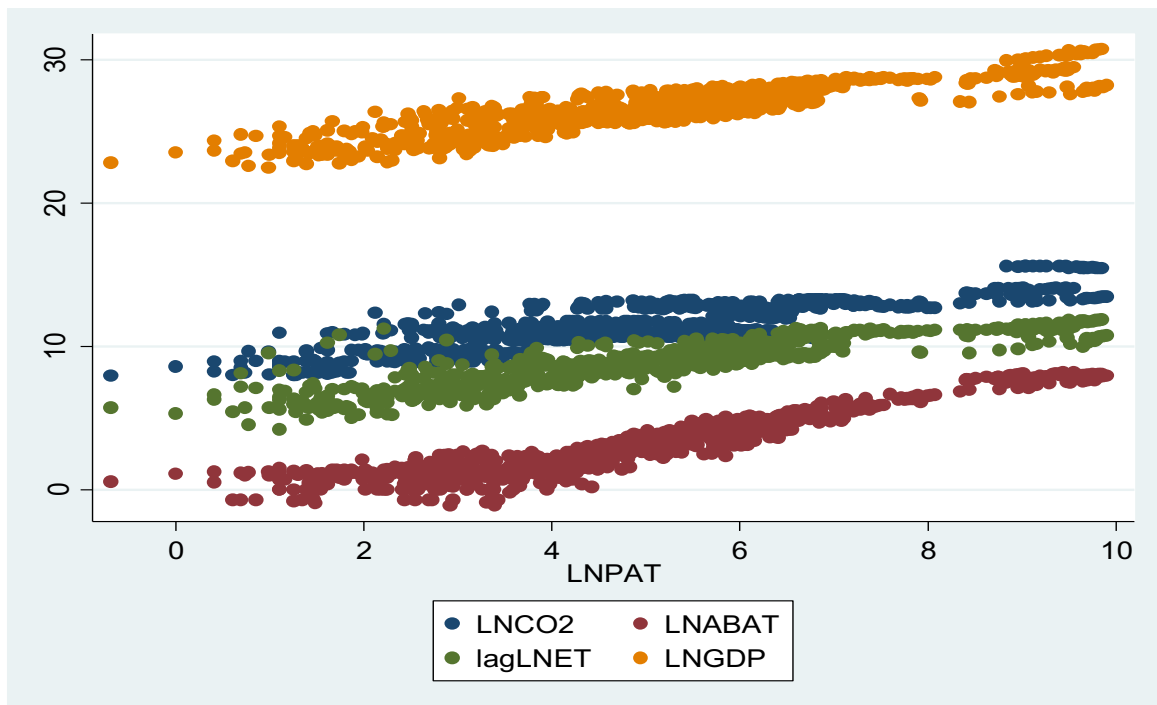
4   Discussion

Research pertaining to the interlink between ecological innovation (E.I.) and carbon dioxide (CO2) emissions (Erdogan, Okumus and Guzel 2020; Costantini, Crespi and Palma 2017; Shobande and Asongu 2023) is being explored. Their model focused on the morphology of the sustainability standards and identifying the key factors contributing to gas emissions. In other words, Erdogan, Okumus and Guzel (2020) carried out a study that presented a history of the type of impact of such types of revolution on carbon dioxide emissions levels in OECD nations, and they concluded that the use of green technology in the production process can lower the CO2 emissions substantially. The movie Zoundi (2017) focused on renewable energy, sustainable resources, and energy conservation and gave nothing but an example of how these things are related to global health. Europe has proven itself well in finding and showing just how eco-innovation is applicable in carbon dioxide reduction and against the wanton disregard of environmental standards (Costantini, Crespi and Palma 2017; Shobande and Ogbeifun 2024; Shobande and Asongu 2023).

Zafar *et al.* (2020) emphasized the advancement of sustainable energy sources in conjunction with energy-saving strategies would help to make the environment more stable. In addition to that, the meticulous work (Safi *et al.* 2023) strongly focused on eco-innovation as the main tool for diminishing the quantity of carbon

discharges in the U.S. The paper by Zhang, Zhang and Xie (2023) explored the concept of eco-innovation and energy technology and their combination to reduce C.O. emissions and promote environmental sustainability. A different side to technology is found in the 17 OECD countries, which concluded by another study that technology is an essential factor in environmental success (Alvarez-Herranz *et al.* 2017). Naz and Aslam (2023) examined the influence of commerce on carbon dioxide emissions in East Asia, discovering that favourable advancements in environmental technology can diminish carbon dioxide emissions. Su *et al.* (2021) studied the correlation between innovations that reduce CO_2 emissions and progress in sustainable buildings and the photovoltaic industry. They concluded that outsourcing is beneficial in reducing CO_2. Ma *et al.* (2022) posited that eco-innovation is vital in limiting CO_2 emissions, mainly through environmental technology development aimed at reducing CO_2 emissions. Therefore, the literature review shows the critical function of ecological innovation in diminishing carbon dioxide emissions.

Many studies have emphasized the relationship between environmental taxes and carbon footprint in OECD countries and confirmed that these taxes can reduce carbon emissions (Khaerul Azis and Widodo; Famielec *et al.* 2019; Jardón, Kuik and Tol 2017; Hussain, Khan and Shaheen 2022). According to Keynesian economics, one should be careful when determining income sources in the country when using environmental taxes to reduce carbon emissions. Therefore, policymakers in the OECD are asked to carefully consider the effective level of taxes to reduce carbon emissions. In addition, other studies showed a significant trend in developed economies where GDP growth coincides with the peak of CO_2 emissions around 2007 and then declines (Hussain, Khan, and Shaheen 2022; Maneejuk *et al.* 2020). For example, although US GDP has doubled since 1990, CO_2 emissions have returned to 1990 levels.

Similarly, in the European Union (E.U.), although the size of the economy increased by 66%, CO_2 emissions decreased by 30% compared to 1990. Most of the demand is related to the topic. In addition, even if health indicators are considered, the decrease in CO_2 emissions in production shows that this does not only affect the enterprise's production.

According to Osobajo *et al.* (2020), the relationship between CO_2 emissions and GDP growth is beginning to differ in many emerging and emerging economies. For example, although the Japanese economy has grown fourteenfold since 1990, carbon dioxide emissions have increased fivefold during the same period. Similarly, in India, GDP growth exceeds CO_2 emissions growth by more than 50%. China, India, and developed economies contribute over 80% of global GDP and nearly 70% of electricity demand. Other developing economies such as Africa, Eurasia, and Latin America have also experienced different economic and emissions trends. Jardón, Kuik and Tol (2017) posited that advances in energy technology across sectors have reduced the energy demand of particular industries. Refrigerators, air conditioners, cars, electric motors, boilers, and other technologies have increased efficiency. As a result, the energy required to produce one unit of global GDP has fallen by 36% since 1990. The energy crisis 2022 calls for action or increased energy, with countries meeting 70% of the world's electricity needs.

Recent research indicates the presence of spatial spillover effects, where environmental tax policies, technology utilization, and economic growth in one OECD country impact carbon dioxide (CO_2) emissions in neighbouring nations (Zafar *et al.* 2021). Previous investigations have furnished empirical proof indicating that economic intricacy is a noteworthy environmental indicator (Sun & Razzaq 2022; Ahmed *et al.* 2022; Adebayo *et al.* 2022; Nan *et al.* 2022). For example, Nan *et al.* (2022) analysed data from 111 selected OECD countries spanning from 1983 to 2017 within the framework of the ecological Kuznets curve, employing a spatial panel model to investigate the impact of globalization and economic complexity on carbon emissions. This is consistent with the findings of the current study. Nan *et al.* (2022) conspicuously illustrated that although global integration does not directly influence carbon emissions in the hosting OECD nation, it does result in a decline in carbon emissions in adjacent countries. However, their research also suggested that economic complexity plays a negative role, increasing the effect of international trade on carbon discharge in neighboring countries (Zoundi 2017). The level of development is vital in determining how the world affects the country's economy.

Other researchers agreed that economic growth is still an essential part of future development strategies and, therefore, emphasizes the beneficial influence of guidance on the environmental calibre (Cutcu, Ozkok and Golpek 2023; Zafar *et al.* 2022). In terms of spatial dependence, research showed that both effect the direct and indirect repercussions of energy availability on income disparity in Latin America and the Caribbean. Similarly, another research investigated spatial spillover effects regarding globalization and carbon discharges, illustrating the existence of a favourable geographic externality of CO_2 discharges from adjacent nations and highlighting the importance of incorporating spillover effects in such analyses (Nan *et al.* 2022). Moreover, a literature segment

pinpointed peer influences in the uptake of domestic renewable energy systems, like residential solar photovoltaics, electric cars, and water heaters (Wen *et al.* 2021; Shpak *et al.* 2022).

Conclusion

Regression analysis reveals that only economic growth significantly predicts CO_2 emissions among OECD countries. Both ABAT and E.T. did not significantly affect CO_2 emissions in the OECD countries. The SAR model revealed the presence of spatial dependence. This means that other countries with higher emissions are also likely to have neighbours with higher emissions, and vice versa. This means there are spillover effects, where technology advancements and environmental policies in one country or region could influence emissions in other countries, especially neighbouring countries.

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Credit Authorship Contribution Statement:

Assaf Malak: Conceptualization, Investigation, Methodology, Project Administration, Software, Formal Analysis, Writing – Original Draft, Data Curation, Visualization.
Hanady Taher: Conceptualization, Supervision, Review, and Editing**.**

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Entrepreneurs' Innovative Behaviour Response in Rural Tourism Development. A Case Study of Local Service Providers in Dong Van Karst Plateau Geopark, Northern Vietnam

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Abstract: Tourism industry becomes the spearhead economy in the Vietnamese government's development strategies that compete with regional countries like Thailand, Taiwan, Singapore, Philippines, Malaysia. Especially tourism in rural areas has been focused on and integrated into regional and national development programs in terms of creating a driving force for socio-economic development, high quality, diversified, and branded tourism products. Innovative efforts are necessary to further promote this industry so as to reap the full benefits and potential of this sector. Creativity and innovative approaches are essential for success.

The objective of this study is to examine the impact of innovation on the effectiveness of entrepreneurs in the tourism industry and propose that strategic and behavioural innovativeness enhances performance of entrepreneurs. Based on semi-structure interviews with 15 local service providers, the existing business challenges facing the service providers were identified and innovation activities that they adopted in responding to the challenges for the development strategies of rural tourism in Dong Van Karst Plateau Geopark. This research contributes to the understanding of innovative behaviour of participants and also some practical benefits as responses to their business challenges. However, the sample size of the study is quite small, new avenues for further research is highly recommended.

Introduction

According to the data provided by the World Travel and Tourism Council, travel and tourism are among the leading industries worldwide in terms of all economic parameters (Theobald 2012). The majority of nations regard tourism as one of their core economic sectors and assign it a prominent role in their economic development objectives (Sharpley 2000). It contributes significantly to the stage budget and other sectors of the gross economy, such as transportation, construction, industry, and various service sectors (UNWTO, 2017). The tourism industry has grown dramatically over the past few decades, with more than 1,5 billion annual international arrivals in 2019 (UNWTO, 2020) before the COVID-19. The number of international tourist arrivals worldwide increased across all regions in 2023 about 1,5 billion compared to the previous years in 2020 and 2021, which Impact of COVID-19 on travel and tourism worldwide as countries worldwide introduced lockdowns and travel bans to curb the number of infections (UNWTO, 2024). Moreover, an increasing interest in rural tourism has spread to nearly every part of the globe (Kumar 2020).

Figure 1. Number of International tourist arrivals worldwide from 2005 to 2023, by region (in millions)
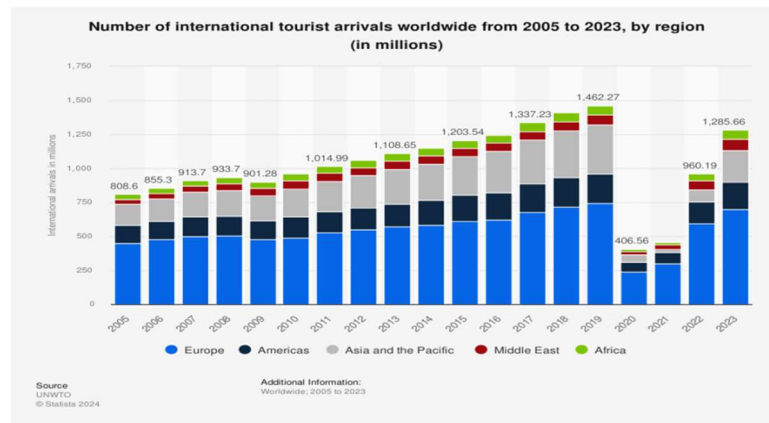
Source: Statista UNWTO (2024).

Rural tourism is a substantial source of revenue for the rural populace and a real and lasting solution to the social and economic problems in rural areas (Tchetchik *et al.* 2008). Particularly in developing countries, rural tourism is viewed as a way to diversify the rural economy (Sharpley and Vass, 2006) in order to create new jobs, increase the incomes of rural residents, and bring about a variety of positive effects including foreign exchange, employment, higher government revenues, and the modernization of agriculture (Ju, 2011) and popular tourism destinations include mostly rural national parks, lakes, cultural landmarks, and wilderness areas (Okech *et al.* 2012).

Despite great potential, rural tourism development remains hindered by numerous issues such as destination image, infrastructure development, workforce training and education, quality management, and sustainable management (Andrades and Dimanche, 2017). The research of Zawislak and Marins (2007) has mentioned the lack of research studies on innovation focusing on the firms in developing countries so that there is needed for a research study working on the innovativeness of rural tourism related to the enterprises in the developing countries.

In 2018, the World Tourism Organization ranked Vietnam third among the top 10 destinations with the fastest growth in international visitors. It presently contributes 8.96 percent to the growth of the gross domestic product and has substantially more opportunity for future expansion (Vietnam News, 2018). More than 80 percent of Vietnam's rural land consists of natural areas and a long history of agricultural production, Vietnam's rural tourism business has not yet reached its full potential growth. Rural tourism in Vietnam is essentially unplanned; no specific planning is done for any location. Products for the tourism business are in short supply and unattractive to visitors (VietnamNews, 2016).

On that account, this paper aims to investigate innovation of entrepreneurs in the rural tourism industry. It brings a case study conducted the challenges faced to local service providers in Dong Van Karst Plateau Geopark, a rural village in the North of Vietnam and proposes the innovation activities to the service providers in responding the challenges for the rural tourism development. Following the introduction, section two provides context for the research paper through a review of the literature and a broad framework for the innovation of rural tourism development. The third section introduces the objectives and methodology of the investigation. Following that, the findings and discussions of the research are proposed. The obstacles and inventive solutions are discussed in the last section of the paper.

1. Literature Review

The study innovation and innovative behaviour in relation to entrepreneurship in rural tourism development as one of the tools to improve the service in this industry. Its efficiency is of paramount importance for tourism development in Dong Van Karst Plateau Geopark and requires deep theoretical research, comprehensive analysis and development of the recommendations based on them. Various aspects of innovation and innovative behaviour in tourism, rural tourism service development related to entrepreneurship have been considered in the works of many scientists.

1.1. An Overview of Rural Tourism, Rural Tourism Service Provider

According to Lane (1994), rural tourism is defined as tourism that should be located in rural areas, be rural in scale, character, and function, and represent the diverse and complex patterns of rural environment, economy,

and history. Gannon (1994) defined rural tourism as a range of activities, services, and amenities provided by farmers and rural people to attract tourists to their area in order to generate additional income for their businesses. In addition, rural tourism can be characterized as the "country experience," which comprises a variety of attractions and activities that occur in agricultural or non-urban locations (Mili 2012).

Rural tourism encompasses eco-tourism, farm-based tourism, agri-tourism, rural tourism, farm household tourism, tourism on family farm, eco-rural tourism, and other forms (Jelinčić 2007). In a research of Irshad (2010), rural tourism encompasses farm-based vacations as well as ecotourism, walking, climbing, and riding vacations, adventure, sport, and health tourism, hunting and angling, educational travel, arts and heritage tourism, and, in some places, ethnic tourism.

World Travel and Tourism Council defines rural tourism service provider as a person or company who ultimately provides the service to the customers who seeks the services of rural tourism industry (Travel and Impact, 2012). Hence, for this research researcher considered above said person, enterprise or company as rural tourism service provider. In further part of the research service provider means rural tourism service provider.

1.2. An Overview of Innovation, Innovation in Tourism and Rural Tourism Research

There are numerous definitions of the term "innovation", which generally refers to the introduction of somethings new (Keller 2006). The variety of definitions stems from the varied reasons for researching the phenomenon (Johannessen *et al.* 2001). Schumpeter (1934) was the first researcher who offered a comprehensive definition of innovation. He described innovation as "new combinations" of existing resources and classified innovation according to "type", distinguishing between new products, new methods of production, new sources of supply, the exploitation of new markets and new ways of organizing business (Schumpeter 1934). Another approach based on Schumpeter' research has classified innovations according to how they compared the existing setup (Freeman *et al.* 1987). In additional, innovativeness has been defined as an organizational overall innovative capability to introduce new product to the market, or open up new markets through the innovative behaviour and process (Wang and Ahmed 2004). However, the majority of innovation research has focused on products or production systems (Fagerberg *et al.* 2005).

The classic work of Schmookler (1966) on "Invention and Economic Growth" argued that the distinction between product technology and production technology was critical for the understanding of this phenomenon. According to him, innovation relies on technical change. He defined the former type as knowledge how to create or improve products and later as the knowledge about how to produce them (Schmookler 1966). Moreover, the term of product innovation and process innovation have been used to characterize the occurrence of new or improve goods or services and also improvement in the way to produce these (Gadrey *et al.* 1995). However, Edquist *et al.* (2001) argued that the distinction between product and process innovation is frequently based on the premise of the economic and social impact difference. He suggested dividing the category of process innovation into technological and organizational process innovation, which related to the new types of machinery and the latter to new ways of organizing work (Edquist *et al.* 2001). However, the organizational innovation which is used by Schumpeter (1934), also included arrangements across firms such as reorganization of entire industries. Camisón and Monfort-Mir (2012) has listed the limitations of a strict Schumpeterian approach to tourism innovation.

The focus on the topic of innovation in tourism increased over the past decade (Cosma *et al.* 2014). Service innovation has attracted considerable scholarly interest in both the hospitality and tourism management literature (Shin *et al.* 2019, Witell *et al.* 2016). Innovation and tourism has been inquired from the various perspectives and the correlation between tourism growth and degree of innovation has been confirmed (Nordin 2003). Hjalager is one of the emergent researchers presented example of innovations in tourism. In 2009, a case study on cultural tourism event which focuses on innovation systems was published (Hjalager 2009b). She emphasized that the concept of innovation systems allows for a better understanding of the complex driving forces and mechanisms that mediate the conditions, the extent and the outcomes of innovative behavior. Another of her research to explore the relationship between innovation and development in Medicines on tourism was also published in (2009a) by providing the three narratives cases of the interconnections. The first case describes developments in drugs for malaria and relations with tourism, the second one addresses recreational drugs and the third one investigates the concept of wilderness medicine and the pharmaceuticals and medical gears that facilitate this category of tourism. Through these examples, this paper demonstrated that the innovations in the medical fields and institutionalization of the medicine using may affect to way tourism and tourism economics development.

The most recent study conducted by de Larrea *et al.* (2021) provided comprehensive reviews of innovation research between multiple disciplines including hospitality and tourism under three perspectives: economic, market, and organizational perspectives. Considering the increasing significance of service innovation as a focus of Hospitality and tourism management (Martín-Rios and Ciobanu, 2019), it is necessary to conduct a thorough examination of the latest research on innovation in both Hospitality and tourism and broader service management. Pikkemaat *et al.* (2019) observed that tourist innovation research is largely concerned with the organizational, network-cooperative, and socioenvironmental contexts. An important contribution of this analysis is to offer current suggestions for future research on developing subjects including innovation in micro and family-owned businesses, as well as a holistic strategy for sustainable innovation. There is also the constant renewal of knowledge bases and their pioneering role in the definition of new uses in tourism projects (Aldebert *et al.* 2011). Jolly and Dimanche (2009) examined a number of technological advancements, particularly those associated with the diffusion of information technologies in tourism industries.

1.3. Research on Entrepreneurship and Innovation in Tourism/Rural Tourism Development

The emphasis for the study of innovation process results from a Schumpeterian perspective has been focused more intensively on empirical research applied to tourism enterprises (Camisón and Monfort-Mir 2012). Innovation might be provided by the demand for a new market or be developed by entrepreneurs (Hjalager 2010). The research of Hjalager (2002) and MartÍnez-Ros and Orfila-Sintes (2009) have explored the influence of market and tourism enterprise characteristics on incremental and radical innovations, also on the decision to innovate in products or processes based on López-Fernández *et al.* (2009). There is also a significant relationship between 'service innovation' and 'operating age' so the improvements in the production process are so important in the survival of travel agencies of the small and medium-sized enterprises in tourism industry (Yüzbaşıoğlu *et al.* 2014). The research of the innovative activity of micro, small and medium-sized tourist enterprises (MSMTEs) has confirmed the key innovation barriers, which are the organizational, environmental and innovation-process to be closely and mutually interrelated (Najda-Janoszka and Kopera 2014). Knowing the factors of innovation potential of tourism firms, destinations and the tourism clusters will entitle the firms to predict the future areas of change in tourism products development as well as marketing (Weiermair 2006). Combine thinking for the tourism research as well as the main reason and being the most things be difference for the main of rural tourism development.

A single case study of a small destination management company and qualitative methods has been used to understand how the environment and existing resources can be reconfigured to create innovative products that will ensure the company's success in the tourism industry (Paget *et al.* 2010). On the other hand, the entrepreneurial response to environmental issues is different. Entrepreneurs are only responding to demand others that only include the efficient management resources to minimize the environmental impact of their business (Ferrari *et al.* 2010). There is a confirmation that good governance combined with galvanized human resources is critical to successful rural tourism and engaged innovation. All of the successful businesses are led by engaged entrepreneurs, involved in implementing incremental improvements and liminal innovation (Joppe *et al.* 2014). An analytical framework and rationale for service innovation policies implementation has been proposed that specific service characteristics and specific service innovation needs may require specific solutions (Rubalcaba 2006).

The role of entrepreneurship is one of 10 gaps to approach in tourism innovation research (Bukhari *et al.* 2012). The support and development of entrepreneurship in rural tourism is possible mainly because of the tourism potential of rural areas and with increased training of human resources, fostering public-private partnerships, public awareness about the effects and needs of this activity development in the local and region (Surugiu, 2009). A numerous research have been carried out the contribution of the rural tourism sector through entrepreneurship (Komppula 2014). Entrepreneurship in rural tourism is considered a central force of economic development, as it generates growth and brings innovation and change (Lordkipanidze *et al.* 2005). In many developing countries, the entrepreneurs in tourism sector are increasing with the government support to build the strength of the small and mediums industries which indirectly reduce the unemployment rate among local communities and the alleviation of poverty (Ashe 2005) by offering services or selling local products to local and foreign tourists (Othman and Rosli 2011). The rural tourism enterprises' innovative capacity is associated with their involvement in cooperation, market-information systems using, and increasing the employees' competence actions (Rønningen 2010). Entrepreneurs in rural tourism are highly motivated to provide their visitors with the best possible combination of experiences, they often lack a sufficiently high level of knowledge and competencies to perform successfully (Jurdana *et al.* 2015). Rosário (2023) assessed the challenges and opportunities of innovation sustainability in tourism entrepreneurship, so establishing a distinct understanding of the necessary

actions to overcome the barriers and enhance recognition of the importance of sustainable tourism. The results of Dias *et al.* (2023) indicated that there is a direct impact of value co-creation and entrepreneurial reactiveness on social innovation. Additionally, there is evidence of a mediating effect between enterprises' market orientation and social innovation practices.

These findings provide fresh insights into the factors that influence the social innovation of entrepreneurs in the tourism lifestyle. This has practical consequences for local governments and destination authorities in their efforts to support the sustainability of destinations (Dias *et al.* 2023).

1.4. Vietnam Tourism Development and Dong Van Karst Plateau Geopark Case Study Purposes

According to the World Tourism Organization, in 2018 Vietnam was ranked third among the ten destinations with the fastest growth of international visitors. Its contribution to GDP expansion is approximately 8.39 percent (Vietnam News 2018) Vietnam's tourism business grew fast, attracting 15,6 million international tourists, serving over 80 million local tourists, and generating a total of 28 based on Vietnamese tourist report in 2018. In addition, the General Department of Tourism acknowledged the tourism business as a significant economic activity in 2018, particularly in rural areas.

Although rural tourism is a relatively new concept in Vietnam, entrepreneurship in this sector is considered a key driver of economic development due to is ability to stimulate growth and bring about innovation and changes (Vuong *et al.* 2011). It greatly affects the tourism communities such as in Hanoi, Lao Cai, Son La, Ha Giang, Hoi An, Ho Chi Minh, Vinh Long, Can Tho, etc. The town offers several sorts of tourism to both domestic and foreign visitors, including tourism focused on exploring the local area, environmentally-friendly tourism, food-related tourism, tourism entered around agriculture, tourism centred around festivals, and tourism entered around handicrafts (Jansen-Verbeke and Go 1995).

Figure 2. Dong Van Karst Plateau Geopark, Districts
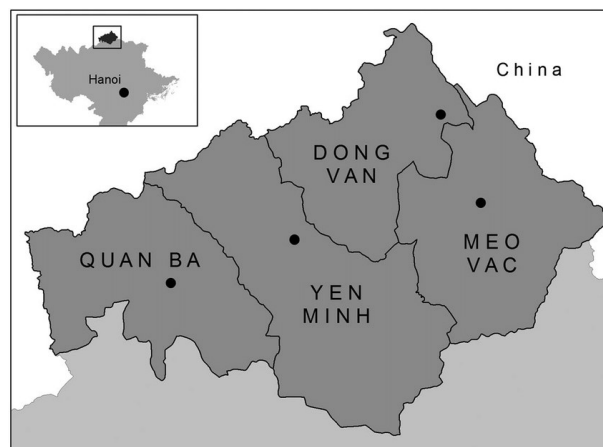
Source: Powell *et al.* (2018).

Dong Van Karst Plateau Geopark is located in the North eastern province of Ha Giang, a mountainous province located in far north of Vietnam which is along the border with China and encompasses four districts of Ha Giang: Yen Minh, Quan Ba, Meo Vac and Dong Van (Ha *et al.* 2013), around 300 km from Hanoi Capital (Figure 1) and a member of the UNESCO Global Geoparks Network and Asia Pacific Geoparks Network from 2010. About 80% of the area of the geopark is covered by limestone which limits arable land surface and makes it vulnerable to unpredictable natural disasters (Turner and Pham 2015, Powell *et al.* 2018). This topography also contributes to the poverty with estimate more than half of the population living below the poverty line.

There are also more than 27 different ethnic groups living in this area. With its earth heritage and unique culture of ethnic minority groups, the Dong Van Karst Plateau in Ha Giang Province is one of the most spectacular destinations in Viet Nam (Vietnam National Authority of Tourism, 2019). The products and cultural activities of each ethnic group pique the interest of domestic and international tourists. Richness and uniqueness of natural tourism resources and humanities are extremely favourable conditions for the growth of tourism products in general and rural tourism in particular. However, ethnic minority groups have higher levels of poverty than the national average (Bank, 2009). Because of this poverty and the diversity in the region, creating alternative lively-hoods through tourism has become a priority of the government (Turner and Pham 2015).

The influence of tourism on the residents of the village is the decisive element for the development of rural tourism. Most local residents remain perplexed regarding the procurement, assimilation and conversion of tourism

services. Prior to implementing tourism products, it is essential to offer individuals a brief training session to familiarize them, enhance their skills and make them aware of the advantages (Tien *et al.* 2019). Local people have a deficiency in self-motivation and expertise in production management, preservation, brand creation, and production marketing. Additionally, they possess limited awareness and willingness to participate in tourism activities (Hau and Tuan 2017) and it requires an upgrade. Particularly in the northern mountainous heartland of Vietnam, the lack of sustainable interventions in the rural tourism development is the greatest obstacle (Jamieson *et al.* 1998).

The development strategy of the Vietnamese government for the tourism industry is to be the spearhead economy of the country. To achieve the 2020 - 2030 target from the Annual Year reports, the focus will be on increasing international and domestic tourists, creating a driving force for socio-economics development, high quality, diversified and branded tourism products, compete with regional countries and belongs to the group of Southeast countries with the leading development tourism industry. The strategies to achieve the targets as follows:

1. Innovating awareness and thinking about tourism development.

2. Restructuring tourism to ensure professionalism, modernity and sustainable development in accordance with the rules of market economy and international integration.

3. Adjusting, supplementing and completing policies directly related to tourism development.

4. Investing and developing infrastructure, technical facilities of tourism industry.

5. Improving tourism promotion.

6. Creating a favourable environment for business and community in tourism development.

7. Developing tourism human resources, strengthening the capacity and efficiency of state management on tourism.

From the strategies above, we have to note that the innovative activities in rural tourism industry related to entrepreneurship is underdeveloped in Vietnam and many other developing countries. Although there are number of studies that have been published, they are rather fragmentary or centre on limited case studies. In this context and with the important of innovation in tourism service, the objectives of this research are:

- To review research on innovation in rural tourism industry.

- To identify the existing challenges facing the developing countries' tourism enterprises. A case of service providers in Dong Van Karst Plateau Geopark.

- To propose the innovative activities to the service providers in responding the challenges for the rural tourism development in Dong Van Karst Plateau Geopark.

2. Research Methodology

2.1. Sampling and Data Collections

This study used semi-structured interviews and a case study research design. A case study of Dong Van Karst Plateau Geopark was used. Face to face interviews and group discussions were used to collect primary data whereby founder-owner, representatives and managers were asked to interview and discuss the challenges they had experienced in business management and operation. Each participant also explained their innovation responses to solve the challenges. A total of 15 services providers were interviewed from November to December 2018. They were selected from the databased the Tourism Department of Dong Van District - Ha Giang Province. Each interview was last between 1.5 to 2.5 hours and then was transcribed, coded, and analysed to discover the innovative behaviours of the service providers.

2.2. Data Analysis

Table 1. Summary characteristics of the participants

Participant	Gender	Educational level	Position	Type of Business
A	Male	Diploma	General Manager	Food and beverage
B	Female	Bachelor degree	General Manager	Accommodation
C	Female	Diploma	Founder	Food and beverage, multiple services
D	Female	Vocational training	Founder	Food and beverage
E	Female	Diploma	Founder	Accommodation
G	Female	Diploma	Founder	Accommodation
H	Male	Diploma	Founder	Accommodation

Participant	Gender	Educational level	Position	Type of Business
I	Male	Bachelor degree	Founder	Accommodation
K	Male	Bachelor degree	Founder	Food and beverage
L	Female	Diploma	Founder	Food and beverage
M	Male	Bachelor degree	Founder	Food and beverage, multiple services
N	Male	Vocational School	Founder	Accommodation
O	Male	Diploma	Founder	Food and beverage, multiple services
P	Male	Diploma	Founder	Accommodation
Q	Female	Vocational School	Founder	Food and beverage

Source: Processed by Researcher.

3. Research Results and Discussions

This research identifies the challenges and the responses to those challenges to discover the innovative behaviour of the service providers in Dong Van Karst Plateau Geopark. Categories, challenges as well as the challenges' responses are presented in table 2.

According to the responses, market and environmental understanding, communication with different stakeholders is one of the most significant obstacles for entrepreneurs in tourism development. Limited understanding of rural tourism and its benefits makes it difficult for local entrepreneurs to manage and operate their businesses. Communication is essential for rural tourism development and promotion initiatives' networks and partnerships. Some responders proposed holding a workshop, conference, or forum in order to share information and debate development plans and processes. In addition, the information demonstrates that some respondents are unwilling to share their ideas with others in their business. They are unaware of its significance for their business growth. The entrepreneurs B, E, and G have joined the Dong Van Hotel Association. They stated, *"Since we joined the Hotel association group in the District, we've had the opportunity to receive the most recent hotel industry regulations from the government, to meet and share our experience as well as our difficulties with others and also receive so many helpful suggestions on how to run our business and enhance our services."*

Table 2. Categories, challenges to the service providers

Categories	Challenges
Market knowledge, environment and communication	The lack of upgrading the latest items available in the market There is a lack of connectivity within the rural tourism service industry Insufficient linkage between the government and enterprises Lack of Government supporting for entrepreneurial activities and development strategies Insufficient government regulation of tourism operations
Competition	The market is saturated with business offering comparable product lines Strong competition from urban entrepreneurs Encountering difficulties in establishing and adhering to the set standards
Managing, operating business and marketing	Searching more global and domestic tourists Attract more tourists Lack of New products promotions, new advertisement strategies
Employee/ staffs	Low skill level of workers. Vietnamese prefer to work in a big city (salary, working environment, other supports …) Negative attitude of the employees
Language	Difficulty of hiring workers, who have higher education and foreign language such as English, etc Non English speaking and other languages. Lack of signage and menu in English or other popular languages
Location and weather	Unexpected wet season Difficulty to get to the destination

Source: Processed by Researcher

Through tourism organizations, the government of Dong Van is the sole driver of tourism development associated to the project or program. The government is responsible for providing the local entrepreneurs with the informational workshop on rural tourism. Inadequate communication between the government and businesses is another obstacle for entrepreneurs. The majority of respondents claimed having almost no knowledge about the government's rural tourism development policies in order to prepare themselves for managing and operating their business or constructing their development plan. Government and industry work independently and do not

collaborate to enhance tourism operations. In addition, the government must also consider and plan for the rural tourism infrastructure development. The administration of Dong Van is responsible for developing tourist strategy and communicating them to tourism groups. The government is regarded as the head of the tourism forum, in which the majority of rural tourism entrepreneurs can participate and exchange ideas, knowledge, and data for the purpose of development.

According to the interviewees, one of the most significant challenges rural entrepreneurs confront is competition on a crowded market with large organizations and metropolitan businesses offering comparable goods and services. Standardization issues and rivalry from major scare units in urban firms are the market's greatest challenges. Hall and Williams (2008) has also mentioned that "Competition is one of the driving forces of innovation generally as well as in tourism." The manager of the hotel, entrepreneur B said: *"my company respond to the competition by providing tourists with additional services. I stated that tourists can make online reservations and pay straight with credit cards. In addition, they can contact travel agents in other locations in order to book a whole tour that includes a stay at my hotel. I also promote the business to the group of tourists".* Another founder of the food and beverage industry, interviewee M, stated that he offers food and drink delivery services to customers in addition to restaurant service, allowing him to reach more customers.

The majority of entrepreneurs are locals from an ethnic group that does not speak the official Vietnamese language, and the most of them are uneducated or have a very poor level of education. Due to their lack of IT understanding, obtaining information from the Internet or a website is quite difficult for them. Buhalis (2008) mentioned that the development of the internet has changed dramatically the market conditions for tourism organizations. Information and technologies (ICTs) evolve rapidly providing new tools for tourism marketing and management (Buhalis and Law 2008). There is a limitation of professional development for small tourism operation owner and ICT can increase professionalism and the innovation in the tourism industry through education (Holden *et al.* 2010). Many tourism firms do not take any effort to collaborate with other firms even though collaboration among individual entrepreneurs and organizations perform a crucial function in the innovation system (Mattsson *et al.* 2005). Thus, it is crucial to equip the local entrepreneurs with a training program so that they can gain business management and operation fundamentals as well as career motivation.

Rural entrepreneurs in Dong Van face a huge hurdle when it comes to marketing their products. There needs to be a significant amount of marketing, promotion, and advertising in order to attract tourists who don't know the market well enough yet. Respondents also offered marketing suggestions, such as establishing a company website, blog, or Facebook page, allowing customers to make reservations online 24 hours a day, seven days a week, via email, or through internet or television advertising.

Marketing techniques for a business, on the other hand, emphasize individuality. As a result, businesses, travel agencies, associations, and the government all need to work together to develop a picture of their offerings. I, the founder of a three-star hotel in Dong Van, stated that the hotel's strong relationships with major travel agencies in the capital city allow it to frequently host large groups of tourists on a weekly or monthly basis. Additionally, they purchased a social media package promotion, so they also have a number of tourists who book accommodations through Facebook.

A high-skilled workforce is difficult to come by for the majority of rural entrepreneurs. Entrepreneurs face a major challenge when it comes to sending their staff to work and providing them with language instruction, as both workers and entrepreneurs are largely uninformed. Moreover, the business environment is mainly inside the family, so it is not encouraged to urge rural people to take up their business as a career.

Rural areas tend to attract the most educated and young people. As a result, training is crucial for the growth of businesses, whether they are run by a private company or the government. Since the majority of their employees are from ethnic groups that do not even speak formal Vietnamese, 99 percent of the respondents do not know English. Neither do their employees. Thus, they opted to interact with the tourists through images or sign language. The businesses also notify the District government of the need to provide English and a popular foreign language to tourism sector players. Service provider N in the accommodation industry and service provider Q in the food and beverage industry face similar difficulties in concealing royal employees, as the majority of young residents with a high level of education prefer to work in a city with a higher income, while those with no education or less are willing to work for their businesses. However, N and Q must pay for their employees' training program and language improvement in order for them to become loyal employees. Additionally, one additional category of problems was retrieved from the interview, namely location and weather, however it is less prevalent based on the research analysis.

Conclusions and Further Research

The research identified number of challenges that face local service providers and their innovation responses in managing and operating their business in Dong Van Karst Plateau Geopark, Vietnam namely: Market knowledge, environment and communication with difference stakeholders, competition, managing, operating and marketing business, employee/ staffs management, language training program, unexpected wet weather and difficulty of location. This study has contributed to the development strategies of rural tourism for difference stakeholders in Dong Van Karst Plateau Geopark. However, the sample size of the study is quite small so further research will be highly recommended. Moreover, further quantitative study can look at the relationship between the innovative behaviour and the reaction of the entrepreneurs and other stakeholders for rural tourism development.

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Credit Authorship Contribution Statement

Thi Hang Truong: The author confirms sole responsibility for the conception of the article and its design, the data collection, analysis of the articles, interpretation of results and the final manuscript preparation.

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Social Responsibility and Airbnb Hosts: Voices from Northern Cyprus

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Abstract: This study examined relevant linkages between motivational factors to be the owner of P2P accommodation (Airbnb host) and being active in pro-environmental and pro-social actions in life practices using a qualitative research method. Our study contributes to the literature associating the motivations of being an Airbnb host and being active in sustainability issues under the framework of moral values. Furthermore, the study analyzed whether an individual awareness of sustainability practices by Airbnb hosts influences their motivations for social responsibility actions in their hosting practices. The key themes followed were 'Community Engagement and Pro-Social Practices', 'Environmental Consciousness and Pro-environmental Practices', 'Family Values on Moral Identity and Legal Compliance', and 'Restoration and Cultural Heritage'. Findings revealed that hosts stress the importance of the level of environmental consciousness that is gained from education in fostering social responsibility. Respondents believed that teaching cultural heritage, environmental awareness, and ethical values, especially to children, is crucial to building a responsible society. Additionally, participants expressed a sense of social responsibility through the restoration of idle and old houses, contributing to the preservation of cultural heritage and historical structures. As a context of the moral identity issue of respondent hosts, the influence of family values on the development of moral identity was highlighted. The findings of the study showed that hosts work in a team to implement necessary projects for the benefit of society. The study ends with a discussion of the findings and relevant suggestions for the industry.

Keywords: moral identity; social responsibility; Airbnb hosts; pro-social; pro-environmental attitudes.

JEL Classification: Q01; Q56; M14; L83; Z32; R11.

Introduction

The expansion of the new approach to the sharing economy all over the globe has affected the tourism and hospitality sectors simultaneously. Scholars in the tourism and hospitality sector discussed the sharing economy platforms as a peer-to-peer (P2P) accommodation model of hospitality (Dolnicar 2021; Karahan and Nergiz 2021; Kuhzady, *et al.* 2022; Mody *et al.* 2021). Airbnb is the most researched sharing economy case study in academia under different circumstances such as perceptions of guests and hosts in several academic disciplines (Barnes and Kirshner 2021; Gössling *et al.* 2021). Scholars also mentioned that Airbnb leads to socio-economic advantages for hosts and guests such as increasing social interaction, providing authentic travel experience, and extra income for individuals (Lalicic and Weismayer 2017; Mody, *et al.* 2019; Zhu *et al.* 2019). In contrast, other groups of scholars highlighted that Airbnb caused many negative socio and economic impacts on communities including unethical behaviors, and illegal economic operations (Cheng and Foley 2018; Farmaki *et al.* 2022).

Airbnb hosts' attitudes through morality principles provide a better understanding of either positive or negative concerns of sharing economy practices (Farmaki *et al.* 2022). Because self-regulation may alleviate regulatory challenges that can otherwise impede innovation elicited by the opportunities offered through P2P

exchanges, Airbnb hosts who aim to share local knowledge and experiences as responsible persons are key in the efforts to regulate the growing phenomenon (Farmaki and Kaniadakis 2018; Farmaki *et al.* 2022).

This study uses the theory of moral identity to understand the moral responsibility and norms of Airbnb hosts in their hosting practices of P2P accommodations. Following the purpose of the study, the moral identity theory was chosen to provide a better understanding regard as the social and environmental issues from the hosts' perspectives in the hospitality sector. Using a moral identity method is essential to investigate participants' opinions of environmental and civic action initiatives from the standpoint of their moral principles (Jia *et al.* 2017). In this regard, scholars identified that there is a close correlation between the moral identities and practices of Airbnb hosts in recent literature (Farmaki 2019; Kunwar 2020).

After a critical review of the recent literature on Airbnb as a sharing economy case in the tourism and hospitality sector, the authors realized that there is still a floor to do more research on sustainability issues, especially in the unique context of Northern Cyprus. Mainly, there is a gap in how Airbnb promotes eco-friendly and sustainable travel, as well as its effects on the environment and local communities (Ding *et al.* 2023). Secondly, recent studies outlined that scholars should use qualitative approaches to examine more sustainability-related issues (Molina *et al.* 2022). Lastly, more studies on the factors that encourage environmentally conscious behaviour changes among individuals in various contexts—like restaurants, hotels, or destinations—are needed by academia (Han 2021).

This study associates the motivations of being an Airbnb host and being active in sustainability issues under the framework of moral values. In this context, there are three main motivations of individuals to prefer to accommodate Airbnb options: sustainability (social and environmental aspects), community (socializing with locals), and economic advantages (low cost) (Tussyadiah and Zach 2015). Additionally, six general motivational factors affect individuals' attitudes toward being an environmental volunteer; contributing to the community; social interaction; personal development; learning about the environment; a general ethic of care for the environment, and an attachment to a particular place (Measham and Barnett 2008)

Academic studies on Airbnb hosts mostly focused on their online profiles including rental prices, discrimination attitudes, and psychological reasons for being hosts and most of the studies showed that individuals would like to become hosts mainly for financial benefits and social interactions (Cheng and Zhang 2019). Considering the main motivations defined in the literature; this study focused on examining relevant linkages between financial/non-financial motivational factors to be the owner of P2P accommodation (Airbnb host) and being active in pro-environmental and pro-social actions into the life practices. The main research question of the study is "what are the reasons for being an Airbnb host and being a proactive individual in sustainable issues." Moreover, the study observes if individuals' awareness of sustainability practices may influence their pro-environmental and pro-social actions in their hosting practices. These behaviors are said to be necessary for the well-being of people and the planet (Rezapouraghdam *et al.* 2023).

1. Literature Review

1.1. Sharing Economy

The concept of a sharing economy is a very controversial issue in academia due to the positive and negative approaches from different scholars. Therefore, the sharing economy (SE), often a confusing concept used interchangeably with numerous other terms, is worthy of research (Cheng 2016; Keogh *et al.* 2022). The first SE' activities were projected for charitable ideals such as bicycle-sharing (name as Freecycle) and home-sharing (name as Couchsurfing) online platforms (Belk 2014). However, the platforms of Couchsurfing (sharing accommodation) and Freecycle (sharing bicycles) turned to a profit-based ideology (Belk 2014). Unlike Couchsurfing, which is a free network for room sharing- not an entire property (Altinay and Babak 2019), Airbnb is one example of an accommodation-sharing business that charges for the service (Corten *et al.* 2019). Over the past ten years, academics have begun to examine sharing economy services like Airbnb and Uber, and this trend is expected to continue given their rising popularity (Corten *et al.* 2019). Over the past ten years, academics have begun to examine sharing economy services like Airbnb and Uber, and this trend is expected to continue given their rising popularity. According to academics, the sharing economy can be broadly characterized by four principles: financial rewards, internet marketing platforms, mutualist persons, and product accession rather than possession (Belk 2014; Keogh *et. al.* 2022; Stephany 2015).

The most well-known example of the P2P accommodation model is Airbnb, which may be characterized as the most obvious business platform used by hosts and guests to maintain lodging services for tourists (Chuah *et al.* 2022; Karahan and Nergiz 2021; Nogalski and Agnieszka 2019). When it comes to sharing millions of housing possibilities with people worldwide, Airbnb was named the biggest sharing economy accommodation

platform in 2019. Over seven million individuals use it (Airbnb 2019; Keogh *et al.* 2022). Moreover, by communicating with locals through Airbnb, visitors can have an authentic experience (Molz 2013; Tussyadiah and Pesonen 2016), which helps people make money from creating and selling goods. As an illustration, activities like dining, painting, dancing, sightseeing, and so on can rise (Altinay and Babak 2019, Atsız *et al.* 2022). Therefore, the demand for the genuine local experience, distinctive character, and cozy atmosphere rather than financial income provided by P2P accommodations (home benefits) and for face-to-face interactions with hosts and local communities (social benefits) are driving the industry's rapid expansion (Kuhzady *et al.* 2022).

According to the CSR principles, Airbnb has projects to increase its reputation as being the biggest sharing economy platform. For example, it achieved collaboration with the 'Make-A-Wish' project, which is one of the world's leading children's charities, several projects completed and ongoing for homeless persons, and 'Open Homes' projects for people who are affected by COVID-19, dramatic natural disasters such as earthquake, fire etc. and 'Project Light House' for protecting human rights and in against any discrimination policies, supporting environmental sustainability programs for reducing carbon emissions, and guiding hosts and guest to be more careful for sustainable actions, projects for LGBT individuals (Airbnb 2023). Moreover, Airbnb concentrates on 'anti-discrimination' policies that restrict host's applications to choose their customers and it introduced a slogan that 'Airbnb for Everyone' (Farmaki and Kladou 2020).

1.2. Social Responsibility and Airbnb

Many tourism destinations and hospitality businesses have begun to give their CSR projects a top priority in the current volatile industry (*e.g.* Karatepe *et al.* 2024; Nourafkan *et al.* 2024). Responsibility in general, and social responsibility specifically is a very broad concept to define in a definite meaning simply, can be defined and categorized from one person to another. Responsibility is an important behavior that every individual should have. It can be defined as individual behavior and responsibilities of the event falling within the jurisdiction both morally and legally (Filiz and Demirhan 2018). Another definition of responsibility at the individual level is as follows; even in situations where there is nothing personally gained from such behavior, people who care about their fellow citizens, participate in group activities that promote shared interests, and feel accountable to society will be concerned about finding solutions to and ending difficulties for others (Rahimah *et al.* 2018). Self-selected objectives are simpler to accomplish, and people are more inclined to follow the road of justice when they are aware of the duty placed upon them (Takala and Pallab 2000).

In general, social responsibility refers to program practices that emphasize social challenges impacting modern, global cultures and communities as well as advocating for the needs of others (Coskun *et al.* 2023; Yetis and Aktas 2021). Human rights, social justice, and community involvement are among the humanitarian concepts that are seen to be intimately tied to social responsibility (Coskun *et al.* 2023; Yetis and Aktas 2021).

A person's caring for others, keeping their word, engaging in society, putting others' needs first, and trying to make the world a better place are all examples of social responsibility (Filiz and Demirhan 2018). It is the moral duty of the many interest groups in society to work together to make strategic management decisions that will save the environment (Takala and Pallab 2000).

Figure 1. Caroll's Four-Part Definition of CSR

Source: Carroll and Shabana (2010).

The above-mentioned figure known as Carroll's pyramid for defining four main concepts of CSR, originally stated as follows: "Corporate social responsibility encompasses the economic, legal, ethical, and discretionary (philanthropic) expectations that society has of organizations at a given point in time" (Carroll and Shabana 2010). As shown in Figure 1, the four main aspects and their effects on the society of CSR are summarized. Figure 1 introduces the cycle of CSR including what is desired and required from society (individuals) and how society (individuals) should act to achieve benefits gained from them. This list of four duties establishes a framework or infrastructure that aids in defining and characterizing the specific obligations that businesses have toward the society in which they operate (Carroll and Shabana 2010).

From another perspective, scholars created the 'Collective Social Responsibility Model' regards as to criticize the existing vision of CSR which includes three concepts, those are Individual Social Responsibility, Group Social Responsibility, and Corporate Social Responsibility as shown in Figure 2 (Socorro *et al.* 2022). The triangle shown in Figure 2 is the combination of acts that demonstrate a strong and high dedication to upholding ethical and legal commitments that are connected to a company's credibility and reputation.

Figure 2. Collective Social Responsibility Model

Source: Socorro *et al.* 2022

1.3. Moral Identity

The word 'moral' can be accepted as unique and its meaning can be introduced differently from one to another. For instance, there is a greater need and responsibility to act in accordance with one's moral concerns when morality plays a significant role in one's sense of self and identity (Aktürk 2021). According to the definition of "identity," which is a self-concept or self-definition, a moral identity is a particular type of identity that focuses on the moral elements of the individual (Reynolds and Ceranic 2007). Moral identity is a particular type of identity that centers around the moral aspects or immoral aspects of oneself (Reynolds and Ceranic 2007; Stets and Carter 2011). For instance, asserting a moral identity encompasses definitions that fall on both the moral and immoral ends of the spectrum (Stets and Carter 2011). For example, identity verification occurs when people's perceptions of who they are in certain circumstances align with their moral identity standard, regardless of whether the verification is on the moral or immoral end of the spectrum (Stets and Carter 2011). People are generally characterized as being principled, modest, selfless, courteous, fair, helpful, generous, and compassionate (Mumcu 2022). Furthermore, when the self-importance of moral identity is high, it undermines the effectiveness of moral disengagement mechanisms that rationalize harming others (Narvaez and Lapsley 2009).

From an overall perspective, one potential element of a person's social self-schema is their moral identity, which is based on a set of associations between moral traits like kindness, compassion, helpfulness, and caring (Aquino and Reed 2002).

2. Method

The study used qualitative research which explores and provides deeper insights into real-world problems (Akhshik *et al.* 2022; Tenny *et al.* 2017). The chosen research method fits well into the aim of the study to understand the level of sustainability knowledge and practices of owners of Airbnb. As an overview, a qualitative research approach is based on subjective rules for understanding the questions of the social world and human beings with its research methods while contributing to assisting in the fundamental quest for contextual depth (Chowdhury 2015).

This method allows researchers to conduct formal discussions and interviews to gain a deeper understanding of individual experiences by using qualitative designs and methods to investigate human experiences in depth (Alharahsheh and Pius 2020; Alipour *et al.* 2021). A semi-structured interview is one of the qualitative research methods that allows the researcher to understand the observed phenomenon comprehensively (Adams 2015; Kallio *et al.* 2016).

Data collection was completed in December 2023. Direct and face-to-face interaction and communication with hosts was a useful and appropriate method for making them more relaxed and sharing their thoughts objectively. The study applied the purposive sampling technique to reach the desirable outcomes of the primary data. The purposive sampling technique is used for discovering and choosing instances that will make the best use of the limited research resources by choosing respondents who are most likely to provide relevant and helpful information (Campbell 2020; Etikan 2016). This technique is often used in qualitative research, a relatively small and purposively selected sample may be employed to increase the depth of understanding where the researcher wants to gain detailed knowledge about a specific phenomenon rather than make statistical inferences (Campbell 2020; Obilor 2023).

3. Sample

There is a total 20 number of Airbnb properties active in Famagusta Walled Town in Northern Cyprus. The researcher contacted all of the hosts and explained the aim of the research. However, some hosts refused to attend interviews, so the data collection was completed with seventy-five percent of the total number of hosts. Overall, 15 hosts have been interviewed (Table 1).

Table 1. Profile of Airbnb hosts and their accommodation type

Participation No.	Gender	Age	Occupation	Property Type
P1	Male	30	Owner of Snack Shop & PhD Student	Entire Property
P2	Female	45	Municipality Public Relations Officer	Entire Property
P3	Male	75	Retired District Governor	Bed & Breakfast Hotel
P4	Male	50	Mechanical Engineer	Bed & Breakfast Hotel
P5	Male	55	Doctor, Former Member of Parliament	Entire Property
P6	Male	34	Owner of Coffee Shop & PhD Student	Entire Property
P7	Male	29	Businessperson	Entire Property
P8	Female	52	Retired Engineer	Bed & Breakfast Hotel
P9	Male	70	Doctor	Entire Property
P10	Female	30	Owner of Bag Shop, Pharmacist	Entire Property
P11	Male	39	Owner of Customs Clearance Company	Entire Property
P12	Female	53	Owner of the Shipping Agency	Bed & Breakfast Hotel
P13	Female	63	Owner of Souvenir Shop	Entire Property
P14	Female	38	Accountant Officer & PhD Student	Entire Property
P15	Female	54	Professor of Architect	Entire Property

Source: Authors.

Participants' gender, age, occupation, and kind of property are displayed in Table 1. Out of all the participants, only four facilitate properties that offer bed and breakfast accommodations; the remaining members rent out their complete homes to Airbnb guests.

The interview questions of the study were adapted from previous literature (*e.g.*, Farmaki *et al.* 2022; Socorro *et al.* 2022). For example, we asked 'Why did you decide to be the host', 'Can you describe the meaning of CSR', 'Which moral traits do you think an Airbnb host must have' and so forth (Farmaki *et al.* 2022; Socorro *et*

al. 2022). Because the official language is not English in Cyprus, a back translation method was applied. All interviews were completed in Turkish and then answers were translated into English. After completion of interviews, interviewed hosts coded as 'Participant (P) 1, 2, 3' into the study.

4. Research Results and Discussion

The research focused on examining the relationship between being an Airbnb host and being a proactive individual on sustainable issues. Therefore, the hosts answered the question to define 'social responsibility' in their own understanding and words. Most of the interviews answer this question specifically thinking of their responsibilities for the Famagusta Walled City.

4.1 Motivational Factors of Airbnb Hosts

In accordance with these statements given from respondents about their reasons for becoming a host on the Airbnb platform, Table 2 is created under two main categories to understand whether they bought a new property or renovated the existing property to be a host. In this first theme, the motivational factors of Airbnb hosts will be discussed under the principles of the sharing economy and social responsibility approaches to examine its link to the motivational factors of Airbnb hosts.

Table 2. The main motivational factors of Airbnb hosts

Buying New Properties	*I bought an old factory building for myself, after I got divorced and since I am an architect, I wanted to turn it into a house and settle down, I decided to apply Airbnb platform to complete my renovation with the income I earned. (P2)*
	I decided to invest in tourism for the future of the island, so I got into this business and bought a property. (P1)
	We are here to gain qualified accommodation for the region and tourism. (P4)
Renovating Existed Properties	*We had two houses that we did not use, so we decided to rent those houses for tourists for the benefit of society. (P10)*
	This was a building inherited from my family, it was an old inn, we wanted to bring this value to life. (P12)
	After completing the restoration of our empty and idle house, we put it on its platform for the benefit of society. (P7)
	My children did not have a job, so we decided to transform our already existing garden into the hospitality sector. (P3)
	Since it is a family heirloom, we wanted to transform this structure, we wanted to bring it to the society, we wanted to bring it to the culture (P8)
	I wanted to renovate our old and unused house inherited from my family and I became a member of this platform. (P14)

Source: Authors.

The first group of respondents (P1, P2, P4) expressed that it is a strategic decision to invest in tourism as a means of contributing to the future of the island. They stated that they are entrepreneurs for future generations. Investment is viewed as a forward-looking approach to economic development and sustainability. Some of them shared that they preferred to be a host for community benefit and provide better or qualified accommodation options for a place. These findings can address an issue in the literature that is illustrated by some groups of scholars viewed the sharing economy as a new economic shape of consumption and entrepreneurship as well due to the emergence of the digital age so the sharing economy may introduce a new era for economic facilities through all around the world (Altinay and Babak 2019; Cohen 2016; Haq *et al.* 2020; Meilä 2018).

Within this context, the expansion of the use of digital platforms motivates individuals to invest in P2P accommodation sectors professionally as it is empirically evaluated in academia. In addition to the above-mentioned statements the first group of respondents, highlighted that their investment is not only financial

earnings, but also contributing to the benefit of society. Therefore, the decision to rent out houses for tourists is framed as a service to the community. Considering Carol's four principles of the CSR triangle, contribution to the community is accepted as one of the positive practices of CSR by an individual (Chuah *et al.* 2022).

The second group of respondents categorized under the motivation of the theme of transforming idle or empty properties into assets for the community is recurrent. Participants like P10, P7, P14, and P8 mention the decision to rent or restore houses that were not in use, turning them into accommodations for the broader society. This can be accepted as one of the important aims of the sharing economy. For instance, the existence of platforms in the sharing economy opens easy applications for unused products by individuals who start to rely less on their private ownership simultaneously (Zhang *et al.* 2022). Regarding the statements, the transformation of unused properties for usage by others is a significant motivation of respondents under the principles of a sharing economy. The second group of respondents added that there is a desire to preserve family heirlooms and contribute to the culture by transforming ancestral structures like P8. Therefore, there is decision to engage in the hospitality sector is tied to a broader goal of cultural preservation and sharing.

These factors collectively highlight a range of motivations, including economic considerations, family dynamics, community benefit, and a sense of cultural and historical responsibility. Those findings can be examined under the 'Collective Social Responsibility Model' that introduced that each positive behaviour of the individual is an added value to the society which creates wealth and promotes a sustainable community. As an aim of reaching a sustainable society, quality is prioritized over quantity which means individuals need to be made aware of the boundaries of self-interest and their moral obligations to the larger society in a world where individuality is valued highly (Takala and Pallab 2000). In this sense, each respondent brings a unique perspective to their involvement in the hospitality sector in FWC, reflecting a multifaceted approach to contributing to the broader societal context.

Quotations given in Table 2 counted as good practices of social responsibility. A person's caring for societal values and human beings, engaging in society, and trying to make the world a better place are all examples of social responsibility (Filiz and Demirhan 2018). In sum, from the provided statements from Airbnb hosts, it is evident that there are several recurring themes related to the reasons why individuals decided to invest in tourism or engage in the hospitality sector.

4.2 Restoration and Cultural Heritage

Participants express a sense of social responsibility through the restoration of idle and old houses, contributing to the preservation of cultural heritage and historical structures. Some participants mentioned that the restoration of unused ancient properties is a part of social responsibility. For instance, "*Social responsibility means the restoration of idle houses, it means the restoration of old houses. We do not earn a huge amount of the renovation costs that we invest in tourism, but we have a responsibility to this community* (P1)." Moreover, P2 says that; "*Airbnb hosting is very important in means of social responsibility, many houses that are idle houses gained a value in the Famagusta Walled City due to practicing of Airbnb in Famagusta and I am very happy that they are being a part of this renovation, it makes a good contribution to this community.*" In addition to these, P12 shared that "*Restoring a building without damaging its natural structure is one of the most important social responsibilities*". Airbnb hosting is seen as a means of social responsibility, contributing to the value and renovation of idle houses in the community. Participants believe that this practice makes a positive contribution to the overall well-being of the community.

Some respondents commented that contributing to cultural heritage and sharing knowledge with visitors is a social responsibility. As noted by P6 "*I contribute to cultural heritage as a social responsibility because tourists visit historical places, I make suggestions and give information when they ask me.*" This statement can be accepted as one of the socio-economic advantages of Airbnb, which provides good practices between hosts and guests. (Lalicic and Weismayer 2017; Mody *et al.* 2019). Another host argued that "*Our property is completely Ottoman Style,...We strive to introduce our values, tradition, culture, and history to our guests.*" (P3)

According to the statements under this theme, Airbnb provides ground in terms of social interaction, authentic travel experience, and extra income for hosts (Zhu *et al.* 2019). Therefore, hosts view their role in providing necessary information and suggestions to tourists as a form of social responsibility. Findings thus contribute to the cultural heritage in terms of educating visitors about historical places to enhance their overall knowledge experience.

4.3 Family Values on Moral Identity and Legal Compliance

The study sought to understand the relationship between moral values (identities) and socially responsible individuals. Most of the respondents share that family values have a strong influence on the development of the moral identity of a person. When someone intentionally creates an identity centered on moral issues and feels strongly obligated and committed to living in accordance with those concerns, that person is said to have a moral identity (Aktürk 2021). In other words, individuals who possess a stronger sense of moral identity are more likely to make lasting moral commitments and act morally. In line with this argument, P9 stated that: *"My family values are very important, my parents were very attached to their children and the family structure, so our moral values were very high. In this respect, I am sensitive to the environment and society."* P8 added: *''Since I learned from my family, I am sensitive to society and I respect the rights of other people, I act according to the rules of nature and moral ethical values. What I learned from my mother, I try to teach my children that everything material and spiritual has a value and that we should not consume more than we need."*

As a context of the moral identity issue of respondent hosts, the influence of family values on the development of moral identity was highlighted. Respondents attributed their sensitivity to environmental and social issues to the values instilled by their families during their upbringing. Furthermore, hosts answered that moral values gained from education and their families, and it has a very strong link to being socially responsible individuals.

4.4 Environmental Consciousness and Pro-Environmental Practices

Some respondent hosts commented that the level of environmental consciousness and the importance of environmental issues is the primary social responsibility both for our community and the entire world. Within this context, P15 mentioned that *"I am an architect, I know that there is only one world, we are using more environmentally friendly products for the wellbeing of our community"* and P 14 stated that *"Especially after I learned that that is one real which is the 'Global Warming' I start to be more sensitive about my consumption such as while I am using water and electric because of thinking the future of the world for coming generation rather than its cost.".* Such comments demonstrate that there is a strong positive understanding of the ecological concerns of hosts.

Moreover, changing people's attitudes toward ecological and consciousness, individual social responsibility will increase people's concern for confronting and resolving ecological catastrophes (Rahimah *et al.* 2018). Respondent hosts shared that awareness of social responsibility can be increased during childhood time and with a good education such as P5 *"It is very important that children are taught about environmental issues and culture by teachers, and it will be very important for children to touch nature and textures of historical building".* A subset of hosts identified themselves as knowledgeable and experienced in pro-environmental practices since they had lived and studied overseas. A few quotations from these instances are included below. P1 mentioned; *"When I was living abroad, I had experience and awareness of waste separation (recycling), but it does not happen in this country. If I could, I would do it, I did it in Germany."* Moreover, P14 stated that *"I have attended several volunteer actives in Europe to understand the importance of being an active citizen for contributing to the sustainable world."*

The study pursued to discover how individual social responsibility influences the hosting practices of Airbnb hosts. All participants focused on the level of their consumption such as water, electricity, fresh products, and so forth. While answering related questions those are accepted as pro-environmental actions of hosts. For instance, *"There is no food waste, etc., we give the leftover bread from breakfast to the fish, tomatoes, cucumbers, turtles, most of the time the guests eat with the turtles".* P3 and *"I take the plastic bottles left by the guests for recycling to the factories. I take the food waste to my mother's chickens and our dog."* P2. Additionally, all participants highlighted the importance of the consumption of water and electricity based on the sustainable environment and its costs. These arguments are illustrated in the excerpts below. P6 argued that; *"I always say that water is life, and I use electricity sparingly in order not to consume the natural resources of the world ... We do this both financially and as a general consumption of the country".*

Findings as mentioned above demonstrate that hosts stress the importance of the level of environmental consciousness that is gained from education in fostering social responsibility. They believe that teaching cultural heritage, environmental awareness, and ethical values, especially to children, is a crucial aspect of building a responsible society. Additionally, given quotations indicated that hosts owing environmental sensitivity and leading pro-environmental practices in their Airbnb practices.

4.5 Community Engagement and Pro - Social Practices

Engaging with communities and pursuing pro-social behaviors are developed from the analysis of study findings. One of the reasons for choosing Airbnb accommodation consists of social sustainability that leads to an advantage in community well-being (Tussyadiah and Zach 2015). In this framework, supporting local businesses and products can be demonstrated through the benefit of the community. The P2P accommodation, a peer-to-peer sharing model where one of the sharing parties shares their assets, is where most sharing economy activities related to collaborative consumption occur (Karahan and Nergiz 2021).

Respondent hosts who are facilitating bed and breakfast types of accommodation mentioned that the P2P accommodation industry supports local businesses and products in society. This can be accepted as collective sharing with other stakeholders. For instance, P4 stated *"I always try to buy and use domestic products, we give priority to people who do small-scale business, which is a social responsibility."* In this regard, the sharing economy practices including P2P open a new way of earning for locals such as producing and selling their local foods while providing traditional experiences (Molz 2013; Zhang *et al.* 2022).

Additionally, hosts argued that using local products in their P2P accommodations affects guests' rebuy intentions. For instance, P8 *"I use domestic products to show that there is production in the country and quality products are produced. And if they are interested in it, I will help my guests to visit producing places of those products".* Such comments interpret that respondent hosts shared that social responsibility is reflected in the preference for domestic products and support for small-scale businesses. Respondents actively choose to buy and use local products, contributing to the local economy and emphasizing responsible consumption.

On the other hand, contributing to the community; social interaction; personal development; and an attachment to a particular place are approaches to social responsibility (Measham and Barnett 2008) In this regard, hosts identified good practices of pro-social behaviors with the guest-oriented practices. Some examples of these viewpoints are the statements that follow. For instance, P10 declared; *"We always ask our guests if they would like to socialize with us, and if they want we prefer to go local places with them to give them a chance to taste local products."* P14 asserted; *"When I welcome my guests, I always tell them they should be free when they need anything about me including emergency and socializing issues."* P8 discussed; *"Socializing with my guests is particularly important to me, I like to hear their stories and share my stories as well. I continued to stay in contact with some of my guests. I became a friend with some of my guests and visited them in their countries too."*

On the other hand, more than half of hosts are regularly active in civil society institutions in their private lives. Findings illustrated that hosts pay attention to personal development and knowledge sharing with others. Moreover, hosts demonstrate place attachment is a crucially crucial factor for community wellbeing. While majority of hosts are a member of a civil society association named MASDER which is *"...working on issues such as protecting the historical texture of FMC and preventing inappropriate interventions into this area."* (P4) and *"I am a board member of MASDER and we aim to protect FWC from all kinds of harmful applications to destroy its historical texture."* Moreover, some of them are members of 'Famagusta City Museum' association *"We are doing projects to highlight the memory of the city, to highlight the urban culture, to integrate the past and future of the city"* and *"We are trying to collect our culture from the past to the present, let's open a city museum."* (P1) Those two associations focused on creating projects for the well-being of FWC.

Additionally, some participants mentioned that they are very active in civil societies that are implementing green activities such as increasing consciousness of the environment and charity activities for disadvantaged individuals. Findings illustrated that hosts choose to be active in pro-social behaviors such as civic actions for community well-being. The statements below support this view. P2; *"I am on the board of directors of the Green Famagusta Association, and we care for the cleaning of our city such as beaches, green areas of town, etc."* P 14; *"I am a board member of Famagusta Lions Club, we are working on collecting charities and creating projects for the benefit of individuals such as donating school bags, shoes, and medical support for kids of the completed projects."* The findings of the study showed that hosts work in a team to implement necessary projects for the benefit of society. Within this view, hosts can take responsibility on a collective level through community engagement and pro-social activities.

Conclusion and Further Research

According to the results of the study, hosts emphasized that they naturally take actions to safeguard the environment and contribute to the sustainable growth of the Famagusta Walled City. Their social responsibility is presented under three classes such as restoration of idle houses, sharing knowledge with visitors, and using local products. The study's objective was to comprehend the knowledge and awareness of social responsibilities

before examining moral values' attachment to them. In this regard, the meaning of 'social responsibility' can be summed up so that hosts can continue their social responsibilities emphatically at the individual level. For instance, as they are a host, their social responsibilities can grow from individual level to different gatherings of people including people from their own local area, and people from unfamiliar networks. Airbnb hosts are respected through principles of moral identities, such as the 'discretion system', 'acting of advantage of human prosperity', and 'legitimate and moral responsibilities'. Respondents stated that they control their utilization for thinking about the eventual fate of the world and sustainable environment. Hosts demonstrated values and characters can be gained from education and families at early ages and this has a significant influence on an individual's entire life to be delicate on sensitive social responsibility issues.

Furthermore, there are areas of strength for environmental responsibility, with respondents utilizing harmless to the ecosystem items, being aware of water and power utilization, and effectively following recycling practices. Solar panels are one sustainable energy option that some of the participants have adopted. A strong commitment to environmental awareness and sustainable practices can be seen in the statements provided. For instance, statements by and large delineate a guarantee to ecological consciousness, gaining from international experiences, taking part in volunteer exercises for positive global effect, and coordinating manageability into scholarly pursuits. On a personal and academic level, these people demonstrate a proactive approach to comprehending and addressing environmental issues.

The study results demonstrate that Airbnb hosts endeavor to introduce local values, history, and socio-cultural personality to visitors. This incorporates exhibiting traditional designs, acquainting visitors with local products, and creations, and sharing data about the town. For example, some of the respondents take the initiative rather than the necessary responsibilities of being hosts and they participate in favorable social activities with their guests, like taking them to neighborhood places, acquainting them with homegrown and local creation offices, and effectively partaking in local area occasions. Moreover, respondents noticed that purchasing nearby items for their P2P offices is a sort of liability through supporting neighborhood economy.

As hosts expressed that they are touchy in tightening support of pro-social behaviors into their hosting practices. One of Airbnb's emerging concepts is sustainability and community issues, as stated in the study's literature section. Consequently, the practices of hosts are genuine models' of social association with visitors and being members of civil society institutions for carrying out volunteer activities with place attachment awareness. Even though hosts have for various reasons, they are constantly spurred by a similar fundamental objective, which is to advance and present Famagusta Walled City's rich social heritage. In particular, the study has shown that respondents who are facilitating Airbnb host practices in the Famagusta Walled City have significant efforts to pursue pro-environmental and pro-social behaviors in terms of social responsibility aspects. Although this study provides results from a single case which includes respondents from the Famagusta Walled City district of the northern part of Cyprus, it added value to the literature based on social responsibility issues in the hospitality sector.

Furthermore, this study bridges a gap in the literature by examining the relationships between the motivational variables that lead people to become Airbnb hosts and their participation in pro-environmental and pro-social behaviors in Northern Cyprus. The study provides a distinctive viewpoint on how individual motives interact with more general social responsibility issues by investigating these connections. Additionally, the study used the 'moral identity' theory while discussing the results of respondents under the emerged themes, which contribute to the advancement of the subject, by framing Airbnb hosts' motivations and their acts of social responsibility within the framework of moral values. According to this framework, owner of P2P accommodations can gain a better knowledge of the underlying values that influence their actions and decision-making, as well as the ethical implications of sustainability practices in the travel and tourism sector. Conclusively, this research presents fresh perspectives on the incentives and social responsibility behaviors of Airbnb hosts, contextualized within a framework of moral principles.

Additionally, our study offers region-specific insights into the social responsibility practices and motives of hosts. This regional viewpoint broadens and deepens our comprehension of sustainable tourism approaches at cultural heritage site of the countries. For instance, this study offers novel insights and significant scientific knowledge shaped under the framework of moral values document for policymakers, heritage conservationists, and tourism stakeholders who are seeking to leverage the potential of P2P accommodations like Airbnb to promote sustainable tourism and preserve the unique cultural heritage of the Famagusta Walled City and beyond.

The study collected data from a single country and single area, so the study can be repeated by focusing on cross-country or cross-cultural approaches to make deeper discussions in the future. Furthermore, the study collected data from a cultural heritage side of the country, this could be a reason that the study results highlighted

that Airbnb hosts who are facilitating in Famagusta Walled City have a high sensitivity on social responsibility issues.

Future research could, for example, compare hosts who are doing their practices in cultural or historical heritage sites of cities such as old towns, etc. and other parts of cities. Finally, mixed method research techniques including qualitative and quantitative can provide different types of investigations and results for understanding social responsibility approaches by Airbnb hosts and customers.

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Credit Authorship Contribution Statement

Fetine Bayraktar: Conceptualization, Investigation, Methodology, Project administration, Data Collection, Formal analysis, Writing – original draft.
Hamed Rezapouraghdam: Supervision, Data curation, Validation, Writing – review and editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of use of generative AI and AI-assisted technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Cultural Guardianship in Tourism: Indigenous Communities' Quest for Economic Stability and Identity Preservation

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Abstract: **Purpose:** This research aims to comprehensively analyze the impacts of tourism on indigenous communities, exploring economic, cultural, social, and environmental dimensions. It also seeks to understand indigenous perspectives on tourism development and identify future research directions for more sustainable approaches.
Methodology: The review employs a systematic approach, conducting exhaustive searches across electronic databases and manual searches in relevant literature. Selection criteria prioritize studies focusing on economic, cultural, social, or environmental effects of tourism on indigenous communities. Thematic organization synthesizes key findings from the literature.
Findings: The review highlights tourism's potential benefits for indigenous communities, such as income generation and cultural revitalization, alongside challenges like cultural appropriation and environmental degradation. Indigenous perspectives emphasize cultural preservation and equitable participation in tourism decision-making.
Originality: This study's originality lies in its comprehensive analysis of indigenous tourism impacts, integrating diverse perspectives and guiding future research directions. By synthesizing existing research and amplifying indigenous voices, it contributes to understanding the complex interactions between tourism development, indigenous cultures, and sustainability.

Introduction

The surge of interest in indigenous tourism stems from its perceived potential to spur economic growth, preserve cultural heritage, and empower indigenous communities. However, beneath this promising narrative lie intricate challenges, including issues of cultural appropriation and environmental degradation. Despite the burgeoning attention, a noticeable gap exists in comprehensive research. While some studies extol the benefits of indigenous tourism, others caution against its adverse effects. This review seeks to address this disparity by delving into the nuanced dynamics between tourism development, indigenous communities, and sustainability.

Historical injustices and contemporary power dynamics underpin the context of indigenous tourism. Indigenous peoples have historically endured marginalization and exploitation, with their lands and resources often appropriated for external gains. In response, indigenous communities increasingly assert their rights to self-determination and sustainable development, challenging the status quo.

This review aims to offer a thorough analysis of the multifaceted interactions within the realm of indigenous tourism. By synthesizing existing research and integrating indigenous perspectives, it endeavors to provide a comprehensive understanding of the opportunities and challenges inherent in indigenous tourism. Structured around three primary objectives—analyzing impacts, exploring indigenous perspectives, and identifying future research—the review endeavors to inform more inclusive and equitable tourism policies and

practices. Through this endeavor, it aspires to foster mutual respect and benefit between tourists and indigenous communities while advocating for sustainable and culturally sensitive approaches to indigenous tourism development.

This study's novelty lies in its comprehensive approach to examining the impacts of indigenous tourism, incorporating diverse perspectives and shedding light on underexplored aspects. By synthesizing existing research and amplifying indigenous voices, it offers fresh insights into the complex interactions between tourism development, indigenous cultures, and sustainability. Furthermore, the study's significance extends to its potential to inform more inclusive and equitable tourism policies and practices. By addressing gaps in the literature and advocating for culturally sensitive approaches to tourism development, this review aims to contribute to the advancement of indigenous tourism as a means of fostering mutual understanding, respect, and benefit between tourists and indigenous communities.

Background and Context

Indigenous tourism, characterized by the engagement of indigenous communities in the tourism industry, has garnered increasing attention in recent years due to its potential to foster economic development, cultural preservation, and community empowerment. This form of tourism offers unique opportunities for indigenous peoples to share their cultures, traditions, and landscapes with visitors, while also generating income and employment within their communities. However, the intersection of tourism development and indigenous cultures is complex, often presenting challenges related to cultural appropriation, environmental degradation, and social inequality.

The concept of indigenous tourism is deeply rooted in historical and contemporary relationships between indigenous peoples and colonial powers. Throughout history, indigenous communities have been marginalized and exploited, with their lands and resources often appropriated for the benefit of outsiders. In response to these injustices, indigenous peoples have increasingly sought to reclaim control over their cultural heritage and natural environments, asserting their rights to self-determination and sustainable development.

Rationale for the Study

Despite the growing interest in indigenous tourism, there remains a need for comprehensive research that critically examines its impacts and implications for indigenous communities. While some studies have highlighted the potential benefits of tourism development for indigenous peoples, others have raised concerns about its negative consequences, including cultural commodification, environmental degradation, and social disruption. Additionally, indigenous perspectives and voices are often marginalized in tourism decision-making processes, further exacerbating inequalities and power imbalances.

This review seeks to address these gaps in the literature by providing a nuanced analysis of the complex interactions between tourism development, indigenous communities, and sustainability. By synthesizing existing research and incorporating indigenous perspectives, this study aims to deepen our understanding of the opportunities and challenges associated with indigenous tourism, ultimately informing more inclusive and equitable tourism policies and practices.

Objectives of the Review

This review has three main objectives. Firstly, it aims to analyze the multifaceted impacts of tourism on indigenous communities, encompassing economic, cultural, social, and environmental aspects. This examination seeks to shed light on both the positive contributions tourism can make and the negative consequences it may bring. Secondly, the review intends to delve into the perspectives of indigenous communities regarding tourism development. This involves amplifying the voices and experiences of indigenous peoples themselves, providing a nuanced understanding of their viewpoints on the matter. Lastly, the review strives to pinpoint critical issues, emerging trends, and potential areas for future research. By doing so, it aims to facilitate the adoption of more sustainable and culturally sensitive approaches to indigenous tourism development, ultimately fostering mutual benefit and respect between tourists and indigenous communities.

1. Literature Review

1.1 Definition and Characteristics of Indigenous Tourism

Indigenous tourism, also known as ethnotourism, aboriginal tourism, or native tourism, encompasses a range of tourism activities that involve indigenous communities showcasing their cultural heritage, traditions, and lifestyles to visitors (Kheiri 2023). While indigenous tourism experiences vary widely across different regions and communities, they often share common themes of authenticity, sustainability, and cultural exchange. Indigenous

tourism can take various forms, including guided cultural tours, craft workshops, traditional ceremonies, and homestays, allowing visitors to engage directly with indigenous peoples and gain insights into their way of life.

The defining characteristic of indigenous tourism lies in its emphasis on indigenous perspectives, values, and voices (Wani *et al.* 2023). Unlike conventional tourism, which often commodifies culture for mass consumption, indigenous tourism prioritizes the empowerment and self-representation of indigenous communities. By participating in tourism activities on their own terms, indigenous peoples retain control over their cultural narratives and promote a more authentic and respectful portrayal of their heritage.

Central to the concept of indigenous tourism is the principle of cultural sustainability (Sharia & Sitchinava 2023). Indigenous communities often face pressures to adapt their traditions and practices to meet the expectations of tourists, leading to concerns about cultural dilution and distortion. However, many indigenous tourism initiatives seek to strike a balance between preserving cultural authenticity and adapting to changing visitor demands. This may involve revitalizing traditional practices, promoting indigenous languages, and supporting local artisans and performers.

Moreover, indigenous tourism is closely linked to broader movements for indigenous rights and self-determination (Curtin *et al.* 2022). In many cases, tourism serves as a means for indigenous communities to assert their sovereignty over their ancestral lands and resources, reclaiming spaces that have been historically marginalized or exploited. By controlling their own tourism enterprises, indigenous peoples can generate income, create employment opportunities, and reinvest profits back into their communities, contributing to economic development and social empowerment.

1.2 Economic Impact of Tourism on Indigenous Communities

Tourism can have significant economic implications for indigenous communities, presenting both opportunities for income generation and employment, as well as challenges related to economic leakage and dependency.

1.2.1 Income Generation and Employment Opportunities

Tourism can serve as a vital source of income for indigenous communities, providing opportunities for entrepreneurship and economic diversification (Conell 2021). Through the development of tourism infrastructure and the provision of goods and services, indigenous individuals and businesses can capitalize on the demand for authentic cultural experiences and products. Moreover, tourism-related activities such as guided tours, cultural performances, and handicraft production can create employment opportunities for community members, particularly those with traditional knowledge and skills (Buckley *et al.* 2021).

In addition to direct economic benefits, tourism can also stimulate indirect and induced economic impacts, including increased demand for goods and services in local markets and investment in infrastructure development (Ngo & Pham 2023). Furthermore, tourism revenue generated within indigenous communities can contribute to broader economic development initiatives, such as healthcare, education, and infrastructure improvements, enhancing overall quality of life for community members (Nunkoo & Ramkissoon 2012).

1.2.2 Economic Leakage and Dependency Issues

Despite the potential benefits, indigenous communities may also face challenges related to economic leakage and dependency on external tourism operators (Zhou *et al.* 2023). Economic leakage occurs when a significant portion of tourism revenue generated within a community flows out to external stakeholders, such as tour operators, hotel chains, and government agencies, rather than circulating within the local economy (Xiang & Gretzel 2020). This can limit the extent to which indigenous communities directly benefit from tourism development and may exacerbate disparities in wealth distribution.

Moreover, reliance on tourism as a primary source of income can create dependency among indigenous communities, making them vulnerable to fluctuations in tourist arrivals, changes in market trends, and external economic shocks (Gamidullaeva *et al.* 2023). In some cases, over-reliance on tourism revenue may undermine traditional livelihoods and cultural practices, as communities prioritize economic activities that cater to tourist preferences over sustainable resource management and cultural preservation (Duim and Caquard 2019).

Addressing issues of economic leakage and dependency requires strategies that prioritize community ownership and control over tourism development initiatives, as well as measures to enhance local capacity-building and economic diversification (Chok and Macbeth 2019). By fostering entrepreneurship, promoting sustainable livelihoods, and strengthening local governance structures, indigenous communities can maximize the positive economic impacts of tourism while mitigating potential risks and vulnerabilities.

1.3 Cultural Impact of Tourism on Indigenous Communities

Tourism has profound cultural implications for indigenous communities, influencing both the preservation and revitalization of indigenous cultures, as well as the risk of cultural appropriation and commodification.

1.3.1 Preservation and Revitalization of Indigenous Cultures

Indigenous tourism can play a significant role in preserving and revitalizing indigenous cultures by providing opportunities for cultural expression, transmission of traditional knowledge, and intergenerational learning (Connell 2021). Through tourism activities such as cultural performances, storytelling, and guided tours, indigenous communities can showcase their unique cultural heritage to visitors while reinforcing cultural pride and identity among community members (Ngo and Pham 2023). Moreover, tourism revenues generated from cultural tourism initiatives can support efforts to maintain and revitalize indigenous languages, arts, and crafts, contributing to the sustainability of indigenous cultures (Nunkoo and Gursoy 2019).

1.3.2 Cultural Appropriation and Commodification

However, the commercialization of indigenous cultures for tourism purposes can also give rise to concerns about cultural appropriation and commodification (Xiang and Gretzel 2020). Cultural appropriation occurs when aspects of indigenous culture are used or marketed by outsiders without proper respect or understanding of their significance, often leading to distortion or misrepresentation of indigenous identities and traditions (Sharia and Sitchinava 2019). Moreover, the commodification of indigenous cultures for tourism consumption can reduce cultural practices to mere commodities, stripping them of their spiritual, social, and historical significance (Picard and Wood 2018). This can erode the authenticity and integrity of indigenous cultures, undermining efforts towards cultural preservation and self-determination.

To address these challenges, indigenous communities and tourism stakeholders must work collaboratively to ensure that tourism development initiatives are guided by principles of cultural respect, authenticity, and reciprocity (Scheyvens and Biddulph 2017). This may involve establishing codes of conduct for tourism operators, implementing cultural sensitivity training programs, and engaging in meaningful dialogue with indigenous communities to co-create tourism experiences that reflect their values and aspirations (Chukwu *et al.* 2023).

1.4 Social Impact of Tourism on Indigenous Communities

Tourism can have significant social implications for indigenous communities, influencing aspects of community well-being, quality of life, social cohesion, and identity.

1.4.1 Community Well-being and Quality of Life

Tourism can contribute positively to the well-being and quality of life of indigenous communities by providing economic opportunities, social benefits, and cultural revitalization (Kline *et al.* 2020). The infusion of tourism revenue into indigenous communities can support essential services and infrastructure development, such as healthcare, education, and housing, improving overall living standards for community members (Guttentag 2020). Moreover, tourism can create opportunities for community members to engage in meaningful employment, skills development, and capacity-building initiatives, enhancing their sense of purpose, dignity, and self-worth (Connell 2013).

Furthermore, tourism can contribute to the preservation and promotion of indigenous cultures, languages, and traditions, fostering cultural pride and identity among community members (Duim and Caquard 2019). Through tourism-related activities such as cultural festivals, storytelling sessions, and indigenous-owned businesses, indigenous communities can celebrate and share their unique cultural heritage with visitors, strengthening social bonds and promoting intercultural understanding (McIntyre and Pigram 2015).

1.4.2 Social Cohesion and Identity

Tourism can also play a role in promoting social cohesion and reinforcing collective identity within indigenous communities (Hernández *et al.* 2021). By engaging in tourism-related activities together, community members can develop a shared sense of purpose, solidarity, and belonging, transcending differences in age, gender, and socioeconomic status (Fennell 2015). Moreover, tourism can provide opportunities for intergenerational knowledge transfer and cultural exchange, facilitating connections between elders, youth, and future generations (Nunkoo and Ramkissoon 2012).

However, tourism development can also give rise to social tensions and conflicts within indigenous communities, particularly in cases where there are competing interests and power dynamics at play (Lapuz

2023). Disputes over land rights, resource allocation, and decision-making authority can strain social relationships and erode trust among community members, leading to divisions and fragmentation (Lemelin *et al.* 2018). Additionally, the influx of tourists into indigenous communities can disrupt traditional social norms and practices, leading to concerns about cultural erosion and loss of authenticity (García and Alzúa 2020).

1.5 Environmental Impact of Tourism on Indigenous Lands

Tourism can have significant environmental implications for indigenous lands, influencing both conservation efforts and the preservation of cultural landscapes.

1.5.1 Conservation and Sustainable Resource Management

Indigenous lands often encompass diverse ecosystems, biodiversity hotspots, and natural resources that are critical for ecological conservation and sustainable development (Baloch *et al.* 2023). Tourism can serve as a catalyst for conservation initiatives by raising awareness about the value of indigenous lands, fostering environmental stewardship, and supporting efforts to protect fragile ecosystems (Ruhenen *et al.* 2020). Through ecotourism initiatives, indigenous communities can showcase their traditional ecological knowledge and practices, promoting sustainable resource management and biodiversity conservation (Scheyvens and Biddulph 2017). Moreover, tourism revenues generated within indigenous lands can fund conservation projects, habitat restoration efforts, and wildlife protection programs, contributing to the long-term preservation of natural landscapes and species diversity (Buckley 2019).

1.5.2 Ecological Degradation and Cultural Landscape Preservation

However, the rapid growth of tourism can also pose significant threats to indigenous lands and cultural landscapes, leading to habitat destruction, pollution, and ecosystem degradation (Duim and Caquard 2019). Unsustainable tourism practices such as overdevelopment, deforestation, and excessive resource extraction can disrupt fragile ecosystems, alter natural habitats, and threaten the survival of indigenous flora and fauna (Nasridinovna 2023). Moreover, the influx of tourists into indigenous territories can disturb traditional land-use patterns, sacred sites, and cultural landscapes, undermining indigenous peoples' cultural heritage and sense of place (Prasetyo *et al.* 2023).

To mitigate these environmental impacts, indigenous communities and tourism stakeholders must prioritize sustainable tourism development practices that minimize negative ecological footprints and enhance environmental resilience (Ngo and Pham 2023). This may involve adopting eco-friendly tourism technologies, implementing carrying capacity limits, and engaging in participatory land-use planning processes that respect indigenous rights and knowledge (Deng *et al.* 2021). Additionally, fostering partnerships between indigenous communities, government agencies, and conservation organizations can facilitate collaborative efforts to monitor and manage environmental impacts, ensuring the long-term sustainability of tourism development on indigenous lands (Voronkova *et al.* 2024).

1.6 Indigenous Perspectives on Tourism Development

Indigenous communities play a crucial role in shaping and defining the direction of tourism development within their territories. Their perspectives offer valuable insights into the opportunities, challenges, and priorities associated with tourism development.

1.6.1 Voices from Indigenous Communities

Indigenous communities possess a wealth of traditional knowledge, cultural practices, and ecological wisdom that are integral to sustainable tourism development (Nasridinovna 2023). Their voices and perspectives are essential for ensuring that tourism initiatives respect and align with indigenous values, aspirations, and worldviews (Rastegar *et al.* 2023). Through participatory approaches such as community-based tourism planning, indigenous communities can actively engage in decision-making processes, identify their own development priorities, and exercise agency over tourism development initiatives (Duim and Caquard 2019). Moreover, indigenous-led tourism enterprises and initiatives can provide opportunities for economic self-determination, cultural revitalization, and community empowerment, allowing indigenous communities to reclaim control over their cultural heritage and natural resources (Connell 2013).

1.6.2 Indigenous Rights and Empowerment in Tourism Decision-Making

However, indigenous communities often face challenges in asserting their rights and interests in tourism decision-making processes, particularly in contexts where power dynamics are skewed towards external stakeholders (Picard and Wood 2018). Limited access to resources, unequal bargaining power, and lack of representation in governance structures can marginalize indigenous voices and perspectives, leading to inequitable outcomes and conflicts over land and resource management (Gentry *et al.* 2023). Additionally, the commodification of indigenous cultures and traditions for tourism purposes can perpetuate stereotypes, erode cultural authenticity, and undermine indigenous self-determination (García and Alzúa 2020).

To address these challenges, it is essential to prioritize indigenous rights and empowerment in tourism decision-making processes (Upreti 2023). This requires recognizing and respecting indigenous land tenure systems, customary laws, and governance structures, as well as promoting meaningful consultation, collaboration, and partnership-building between indigenous communities, government agencies, and private sector actors (Voronkova *et al.* 2024). Moreover, capacity-building initiatives, education programs, and legal frameworks that support indigenous self-governance, cultural revival, and economic empowerment can help redress historical injustices and create more inclusive and equitable pathways for indigenous participation in tourism development (Buckley 2019).

2. Methodology

This review paper employs a systematic approach to investigate the intricate dynamics between tourism development, indigenous communities, and sustainability. The methodology encompasses three main facets: search strategy and selection criteria, data collection and analysis methods, and acknowledgment of the review's limitations.

2.1 Search Strategy and Selection Criteria

To ensure a comprehensive exploration, a meticulous search strategy was devised to unearth pertinent literature on indigenous tourism, community development, and environmental sustainability. Exhaustive searches were conducted across electronic databases such as PubMed, Google Scholar, and Scopus, utilizing a combination of keywords including "indigenous tourism," "community development," "sustainability," and related terms. Additionally, manual searches were performed on relevant journals, books, and reports to guarantee inclusivity.

The selection criteria were crafted to encompass literature aligning with the review's overarching themes and objectives. Inclusion criteria prioritized studies offering insights into the economic, cultural, social, or environmental ramifications of tourism on indigenous communities. Both empirical research and theoretical perspectives were considered, with preference given to recent publications within the last decade to ensure currency and relevance.

2.2 Data Collection and Analysis Methods

Data collection involved a rigorous examination of selected literature, including articles, book chapters, and reports, to distill key findings, arguments, and viewpoints concerning tourism's impact on indigenous communities. Thematic organization was employed, adhering to the review's structural framework delineated in the introduction, which delineated sections on economic, cultural, social, and environmental impacts, alongside indigenous perspectives on tourism development.

The analytical process entailed synthesizing and critically evaluating the literature to discern patterns, themes, and research gaps. Comparative analysis facilitated exploration of similarities and disparities in tourism impacts across diverse contexts and geographic regions. Moreover, emphasis was placed on amplifying indigenous voices and perspectives to yield a nuanced understanding of the multifaceted issues at hand.

2.3 Limitations of the Review

Despite stringent efforts to uphold comprehensiveness and rigor, this review is not devoid of limitations. Firstly, the review's scope is confined to English-language literature, potentially introducing language bias and overlooking relevant studies published in other languages. Secondly, the selection criteria may have inadvertently excluded certain studies, especially those not indexed in mainstream databases or accessible online. Thirdly, the review primarily leans on academic research, potentially neglecting insights from non-academic sources such as community reports and grey literature. Finally, despite efforts to prioritize recent publications, the omission of older studies may impact the review's comprehensiveness.

3. Results and Discussion

This section provides an overview of studies investigating the multifaceted impacts of tourism on indigenous communities, encompassing economic, cultural, social, and environmental dimensions, as well as synthesizing indigenous perspectives on tourism development.

3.1 Overview of Studies on the Economic Impact of Tourism on Indigenous Communities

A plethora of studies have delved into the economic impact of tourism on indigenous communities, highlighting both opportunities and challenges. Research by Prasetyo *et al.* (2020) emphasizes the potential for tourism to generate income and employment opportunities, particularly in remote or marginalized indigenous regions. Conversely, studies by Jones and Brown (2019) and García and Alzúa (2020) underscore the risks of economic leakage and dependency issues associated with tourism development, wherein profits primarily benefit external stakeholders, leaving indigenous communities vulnerable to exploitation and socioeconomic disparities.

3.2 Summary of Findings Regarding the Cultural Impact of Tourism on Indigenous Communities

The cultural impact of tourism on indigenous communities is a topic of considerable debate and scrutiny. Recent studies by Henfrey *et al.* (2023) and Williams *et al.* (2022) highlight the positive role of tourism in preserving and revitalizing indigenous cultures, fostering cultural pride, and identity among community members. However, research by Smith and Johnson (2019) and García and Alzúa (2021) caution against the risks of cultural appropriation and commodification, whereby indigenous cultures are exploited for commercial gain, leading to erosion of authenticity and loss of traditional knowledge.

3.3 Insights into the Social Impact of Tourism on Indigenous Communities

Social impacts of tourism on indigenous communities are multifaceted, with studies offering diverse insights into community well-being, social cohesion, and identity. Research by Lee *et al.* (2021) and Fennell (2018) highlights the potential for tourism to enhance community well-being and quality of life through economic opportunities, infrastructure development, and cultural exchange. Conversely, studies by Gentry (2024) and Nunkoo and Ramkissoon (2012) underscore the risks of social tensions and conflicts arising from tourism development, particularly concerning land rights, resource allocation, and cultural integrity.

3.4 Examination of the Environmental Impact of Tourism on Indigenous Lands

The environmental impact of tourism on indigenous lands is a critical concern, with studies shedding light on conservation efforts and ecological degradation. Recent research by Deng *et al.* (2021) and Rastegar *et al.* (2023) underscores the potential for tourism to support conservation initiatives, promote sustainable resource management, and raise environmental awareness among visitors. However, studies by García & Alzúa (2020) and Ngo & Pham (2023) highlight the adverse effects of tourism-related activities such as habitat destruction, pollution, and biodiversity loss, threatening the ecological integrity of indigenous lands.

3.5 Synthesis of Indigenous Perspectives on Tourism Development

Indigenous perspectives on tourism development offer invaluable insights into community aspirations, rights, and priorities. Studies by Duim and Caquard (2020) and (Williams *et al.* 2023) emphasize the importance of indigenous self-determination, cultural revival, and empowerment in shaping tourism initiatives. Moreover, research by Connell (2015) and Scheyvens and Biddulph (2016) underscores the need for meaningful consultation, collaboration, and partnership-building between indigenous communities, government agencies, and tourism stakeholders to ensure equitable and sustainable

Conclusion

Summary of Key Findings

This review paper has explored the multifaceted impacts of tourism on indigenous communities, encompassing economic, cultural, social, and environmental dimensions. Key findings reveal the potential for tourism to generate income and employment opportunities for indigenous peoples, while also highlighting the risks of economic leakage, cultural appropriation, and social tensions associated with tourism development. Moreover, tourism has been shown to both support conservation efforts and threaten the ecological integrity of indigenous lands. Indigenous perspectives underscore the importance of cultural preservation, community empowerment, and equitable participation in tourism decision-making processes.

Implications for Tourism Policy and Practice

The insights gleaned from this review have significant implications for tourism policy and practice. Policymakers and tourism stakeholders must prioritize sustainable tourism development practices that respect indigenous rights, promote cultural authenticity, and enhance community well-being. This necessitates the adoption of inclusive governance structures, capacity-building initiatives, and regulatory frameworks that empower indigenous communities and foster meaningful engagement in tourism planning and management processes. Additionally, efforts to promote responsible tourism behaviour, environmental stewardship, and equitable distribution of tourism benefits are essential for ensuring the long-term sustainability of indigenous tourism initiatives.

Recommendations for Future Research

While this review has provided valuable insights into the impacts of tourism on indigenous communities, several avenues for future research warrant exploration. Further studies are needed to examine the long-term socio-economic impacts of tourism on indigenous livelihoods, including its effects on income distribution, employment stability, and social cohesion within indigenous communities. Additionally, research is needed to investigate the efficacy of different tourism governance models, community-based tourism initiatives, and conservation strategies in fostering sustainable development outcomes for indigenous peoples. Moreover, interdisciplinary approaches that integrate perspectives from anthropology, sociology, environmental science, and indigenous studies can enrich our understanding of the complex interactions between tourism, culture, and community well-being.

Final Reflections on Balancing Economic Opportunities with Cultural Preservation and Community Well-being in Indigenous Tourism

In conclusion, achieving a delicate balance between economic opportunities, cultural preservation, and community well-being is paramount for the sustainable development of indigenous tourism. While tourism has the potential to generate much-needed revenue and promote cultural exchange, it also poses significant challenges in terms of cultural commodification, environmental degradation, and social inequality. Moving forward, it is imperative for policymakers, tourism practitioners, and indigenous communities to collaborate in developing strategies that prioritize cultural integrity, environmental sustainability, and social equity in tourism development initiatives. By fostering respectful and mutually beneficial partnerships, indigenous tourism can serve as a powerful tool for promoting cultural revitalization, environmental conservation, and socio-economic empowerment among indigenous peoples worldwide.

Credit Authorship Contribution Statement

Kiran Reddy conducted the systematic literature search, data collection, and analysis for the review paper. She contributed significantly to the conception and design of the study, as well as the interpretation of the findings. Sr Reddy also drafted the manuscript and revised it critically for important intellectual content, approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Bhaskar Sailesh provided critical input and oversight throughout the review process. They contributed substantially to the conception and design of the study and played a key role in interpreting the findings. He further contributed to drafting the manuscript and revising it critically for important intellectual content.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Strategic Objectives and Control: Optimizing Strategic Success in the Hospitality Setting through Transformational Leadership

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Abstract: The aim of the study is to assess the impact of strategic and control objectives on strategic success. Furthermore, it seeks to examine how transformational leadership affects the relationship between goal implementation/commitment and strategic success. Using a quantitative approach, the study collects data through convenience sampling. It is particularly relevant in the hospitality industry in Saudi Arabia. The 378 collected responses are analyzed using partial least squares structural equation modeling technique. The findings confirm all hypotheses of the study except the expected role of transformational leadership in mediating the link between implementation goals and strategic success. The study confirms that strategic and strategic objectives have a significant and positive impact on strategic success. Furthermore, transformational leadership is known to play a facilitating role in the relationship between strategic management and strategic success. This study provides valuable insights and recommendations for practitioners and scholars in the hotel industry in Saudi Arabia.

Introduction

Tourism plays an important role in the economies of many countries around the world. In 2000, Saudi Arabia established the Supreme Commission for Tourism (SCT) to promote tourism development. The move is expected to boost the hotel and tourism industry significantly in the coming years. The World Travel and Tourism Council (WTTC 2022) reported that tourism contributed 11% of Saudi Arabia's gross domestic product (GDP) in 2019. The introduction of tourist permits by the government in 2019 is expected to have a positive impact on hotels and tourist-based sectors (Faraj *et al.* 2023). In 21st century hospitality, tourism, or hotel management, management systems have emerged as a key factor, with various tools being used to achieve improved efficiency and competitive advantage (Zadoia & Charkina 2023). In tourism, strategic objectives (SOs) are key drivers for the implementation of sustainability-oriented policies and community development, increasing the demand for responsible leadership in the tourism industry This and the increasing emphasis on environmental and social responsibility in the country meets the sector (Karshiev 2023) where he works. By focusing on SOs, businesses can differentiate themselves through innovation, thereby gaining a competitive advantage. In this context, clear objectives are critical for aligning efforts with shared objectives and ensuring organizational success. Thus, the concept of strategic success (SS) has emerged as an important link between strategic goals and strategies such as strategic control (SC) (labachee 2023). Recent research has shown that SC practices are important in translating strategies into action, enabling organizations to make informed decisions during change or challenges (Akilo & Olaosebikan 2021). These practices include feed-forward feedback mechanisms for goal setting and measurement to ensure that organizational objectives are achieved and that its strategies are effectively implemented. As a result, SS has gained considerable attention in business circles for its role in creating a consistent, robust, and dynamic organizational culture that has led many organizations to seek employee capabilities and transformational leadership (TL) strategies to achieve SOs well (Abuzaid 2018). Organizations use a variety of strategies to develop strategic plans to meet SOs (Wolf & Floyd 2017). These policies are

categorized as coercive actions, aimed at increasing management control and communication, and improving actions that improve internal communication and employee engagement in policy implementation (Alharbi 2024; Novak 2020). Both roles are designed to actively involve employees in organizational processes and ensure that tasks are completed efficiently and in a timely manner. Both roles are designed to actively involve employees in organizational processes and ensure that tasks are completed efficiently and in a timely manner. As the hotel industry goes through these challenges, attention to SOs and the role of SCs becomes increasingly important. This article explores the complex relationship between strategic objectives, SC, and SS, particularly in hotel management, with the aim of providing in-depth insights, for decision-making about strategy has been enhanced, supporting the long-term success of a dynamic hotel business (Caliguri 2020).

Strategic success represents the achievement of the organization's long-term goals and objectives. This is achieved through the effective implementation of a variety of strategies, from small to mid-sized schemes. These strategies include building a brand or franchise, increasing customer value, tracking operational efficiencies, and encouraging flexibility in a changing environment In today's ever-evolving highly competitive business environment, SS acquisition has become a great need for organizations to gain competitive advantage and ensure shared -term sustainability are consistent with, businesses can position themselves for sustainable growth and maintain a strong foothold in their market (Abuzaid 2018; Tawse & Tabesh 2020).Strategic success represents the achievement of the organization's long-term goals and objectives. This is achieved through the effective implementation of a variety of strategies, from small to mid-sized schemes. These strategies include building a brand or franchise, increasing customer value, tracking operational efficiencies, and encouraging flexibility in a changing environment In today's ever-evolving highly competitive business environment, SS acquisition has become a great need for organizations to gain competitive advantage and ensure shared -term sustainability are consistent with, businesses can position themselves for sustainable growth and maintain a strong foothold in their market (Abuzaid 2018; Tawse & Tabesh 2020).

Strategic objectives are an important component of management strategy because they ensure that strategies are used effectively to achieve objectives (Ugboro *et al.* 2011). In the public sector, a robust management system is essential to generate revenue and mitigate the challenges posed by a dynamic market environment. Essential SOs serve as guidelines for decision-making, resource allocation, and employee performance measurement in line with strategic management guidelines (Alharbi 2024). Furthermore, SOs play an important role in organizational development and life cycle, as they influence various aspects of employee performance and business Prominent functions are key performance indicators (KPIs) or are tools to evaluate employee performance, motivate and engage employees, and improve resource management. SOs in different regions can help reshape and differentiate the market among competitors. This may include targeting specific customer segments and offering improved opportunities, highlighting unique offerings, or taking advantage of location advantages (Buhalis & Costa 2006). In addition, clearly defined objectives can provide benefits such as providing highly appreciated services to customers, and enabling organizations to exceed customer expectations (Enz 2009).

Zadoia and Charkina (2023) highlighted that SC is the technique by using which organizations control the system and implementation of strategic plans. It is argued that this management device is distinct because it employs uncertainty and improbability as control mechanisms at diverse factors in the device. Rather than judging achievement based on past problems and screw ups, SC makes a speciality of attaining destiny desires. To steer a company inside the proper course, figuring out areas requiring alternate is vital (Kim 2022). This isn't approximately learning from beyond mistakes; even struggling groups can attain the pinnacle with effective SC. The SC system hyperlinks the effort and time required to finish the steps main to approach implementation. Essentially, SC systematically monitors, measures, and aligns institutional movements with strategic planning or techniques (Aldehayyat & Anchor 2008). It includes comparing real performance towards meant results, detecting deviations, and applying corrective moves whilst necessary. SC mechanisms enable organizations to stay conscious of changes in internal and outside environments, ensuring they stay on track to obtain their SOs. Additionally, SC sports commonly consist of best aid allocation (monetary, human, and other sources), risk management, setting objectives aligned with making plans, and imposing comments mechanisms (Niven 2005). These capabilities contribute to maintaining SC within organizations.

According to (Valentine *et al.* 2024), Leaders who embrace change are more influential in achieving well-defined goals and maintaining authority in for-profit organizations such as businesses and schools. The ability to motivate and motivate teams facilitates successful planning. Chesbrough (2003) argued that innovation is key to the success of businesses in challenging markets and environments. Transformational leadership plays an important role in creative growth and adaptation to new situations. Owolabi and others (2022) suggested that

private universities can use effective SC practices to manage their strategies and be academically competitive. Proper implementation of these policies leads to organizational success for the team, whereas failure to do so can lead to organizational dysfunction. Ketchen and so on (2007) contributed to the resource-based view (RBV) by identifying four factors that are critical to program success. The first is the definition of the objectives for the project, followed by a detailed description of the actions necessary to achieve these objectives. The third includes identifying the competitive advantages of implementing business strategies, including competitive advantage and improved productivity The final section emphasizes that if the first three steps in line with the employer-centred policy apply effectively if. Additionally, it is important to monitor progress, which is usually achieved by monitoring key performance indicators associated with desired outcomes. Transformational leaders excel in building cohesive teams by building trust among followers (Gillespie & Mann 2004).

They achieve intended influence through charisma, inspiring confidence in their vision, and moving the team toward goals. Such leaders encourage collaboration towards shared goals, encourage intellectual stimulation of critical thinking and problem solving, individualize attention to meet the needs of followers, and thus gaining trust Leadership qualities of honesty, kindness, caring, and compassion further enhance trust and improve the chances of negotiation (Jung & Sosik 2002). Followers are more likely to trust their leaders if they see their actions and actions as opportunities to learn and improve. TL is key to effective SOs. In this study, TL will be examined as a moderating factor where SOs and SC are examined as explanatory variables in the context of hotel industry employees.

1 Literature Review

1.1 Theoretical Underpinning

The aim of this study was to examine the effects of SOs and SC on SS, with a particular focus on the moderating effects of TL (see Figure 1). Theories have shed light on this issue. Originally, social change theory (Blau, 2017) examined the evolving nature and dynamics of social change and concluded that individuals participate in social interactions with the expectation of mutual benefit. This theory asserts that people manage relationships through strategies like economic behaviour, seeking to maximize profits while minimizing costs. The principle of reciprocity is important, implying that individuals expect fair returns on relationship investments. This perspective helps us capture the social interactions between employees and transformational leaders, whereby employees may view leaders as a source of support and motivation, which affects their commitment to SOs and compliance with SC practices.

In addition, the investigation of organizational control in other studies (Aldehayyat and Anchor 2008) is particularly relevant when examining SC-SS relationships Recent research in the perspective of guest workplace TL. This leads to long-term engagement and engagement (Bass 1985; Yangailo 2023).

This study will integrate these insights into a specific framework through the use of a structural equation model (SEM). The specific theoretical contributions of the mentioned studies have not been presented in any academic case to date. The findings of this new study will therefore emphasize the importance of implementing strategy in integrating activities, gaining competitive advantage, and focusing on the strategies necessary to achieve success in the hospitality industry in the 19th century.

Figure 1. Theoretical framework and research hypotheses
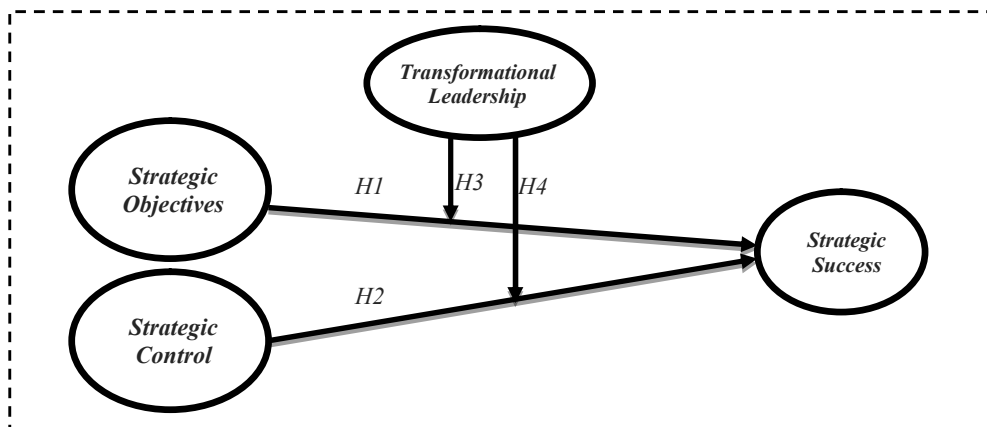
Source: Author based on previous studies

1.2 Strategic Management

Strategic management is an integrated approach to the decisions and actions of management, which is the road map for the ongoing success of any business (Alharbi 2024; Demirtas *et al.* 2020). As implementation planning has evolved, it ensures that resources are allocated more efficiently to implement prior plans and initiatives. It emphasizes the importance of strategic planning, implementation, and monitoring, and emphasizes the importance of thinking about SC points. These controls are important for the evaluation process, which is necessary to achieve the strategic objectives of the organization (Ajay 2023; Alharbi 2024). The established strategy implies the need for integration of strategic planning, implementation, and monitoring, which requires the establishment of SC points to ensure that the organization's strategic objectives are achieved (Ajay 2023). Indeed, strategic management emphasizes the importance of transformational leadership in integrating organizational functions, in identifying and defining strategies for competitive advantage (Yangailo 2023). This study will use a hypothesis-based approach based on insights provided by existing studies. Strategic planning in the hotel industry is found to benefit customer experience, decision-making processes, operational efficiency, and tracking progress toward implementation goals and success. This study examines to examine the determinants of organizational structure in the hospitality sector.

1.3 Hypotheses Development and Conceptual Framework

1.3.1 Strategic Objectives and Strategic Success

SOs fulfilment acts as a key driver of SS in an organization. When SOs are clearly defined, relevant, and effectively implemented, they help an organization achieve its goals, increase its success and performance Empirical evidence supports the concept of defined goals effective internal management leads to organizational success and competitive advantage. Integrating these goals into company culture creates a collaborative environment where employees come together towards shared goals, thus reinforcing their commitment (Allio 2005).

Achieving these goals and achieving success requires several key elements, including alignment with the mission and vision of the organization, proper resource allocation, tracking tools such as measurable results or adoption of Key Performance Indicators (KPIs) or SMART criteria (Specific, Measurable, Achievable, Relevant), Timeline), adapting to internal and external changes, and committing to long-term performance and competitiveness. SOs are more effective and impactful when they can be quantified through statistical evidence or data analysis. However, bridging the gap between these goals and their realization takes careful planning and practical implementation. This management model provides a practical framework that transforms SOs into actionable and efficient products by assigning timelines to employees and assigning tasks based on their capabilities (Nowak 2020; Wolf and Floyd, 2017). The strategic management system includes the creation of clean, measurable dreams, evaluation of the internal and outside environment, approach formulation, plan execution, and the continuing revision and refinement of these elements. Additionally, worker agility and adaptability are essential for retaining competitiveness and responding to new opportunities and demanding situations. Building self-belief among clients, investors, and crew members showcases the corporation's capability to understand its capacity and create fee. Leaders and fans operating in unison decorate consider and foster effective interactions (Jung and Sosik 2002). Some businesses set their strategic desires via powerful integration, making sure alignment between internal and external stakeholders (Grant 2003). This approach to purpose-setting also improves internal communique and collaboration, laying the groundwork for a strategic future (Jarzabkowski and Balogun 2009). Based on this understanding, the hypothesis is formulated as follows:
H1. There is a significant relationship between strategic objectives and strategic success.

1.3.2 Strategic Control and Strategic Success

Strategic control or strategic control practices have a sizeable effect on how properly an organisation achieves its lengthy-time period targets. The potential of a company to achieve its strategic dreams hastily and efficiently is dependent on the structures and strategies in place for SC (Simons 2019). This assemble carries measurement gear for checking the performance of evaluating the effectiveness of achieved plans, making necessary changes suddenly whenever changes arise, and moving ahead as wanted. In different words, it's far an asset containing several pearls including evaluating the business enterprise's dreams, comparing performance in opposition to set standards, and making vital changes to the approach as wanted at some point of implementation (David 2011). To advantage its attention through paving onward a success technique, businesses need some moving actions or tasks for converting behaviour amongst employees together with making the working area agile and vigilant, responsive to variation, and aligning with mottos. Systematic evaluation and modifications grounded on SC

subsidize the whole efficiency and sustainability of a business enterprise's strategy. SS is enabled by way of numerous elements: organizational effectiveness, attainment of particular dreams, and the protection of competitive advantage. Olowe (2017) observed that SC implementation ensured compliance during strategic divisions, enhancing organizational efficiency. In comparing or verifying SC, managers observe internal and outside elements influencing the employer and devise strategies to perform goals, permitting organizations to become aware of while results deviate from expectancies (Langfield-Smith 1997). SC structures in addition allow groups to fast and efficaciously adapt to adjustments. Successful SC application calls for a high level of agree with, which may be superior thru TL. When fans trust that their leaders have their high-quality pastimes in thoughts and are implementing effective controls for the institution's success, they're more likely to stick to tips (Purcell, 2014). Considering these extensive studies, the subsequent hypothesis is proposed:

H2. There is a significant relationship between strategic control and strategic success.

1.3.3 Transformational Leadership as a Moderator

TL has garnered interest no longer simply from renowned students, but additionally from researchers throughout numerous fields (Li *et al.* 2019; Tayal *et al.* 2018; Ravangard *et al.* 2016; Dinh *et al.* 2014; Carless *et al.* 2000; Zhang *et al.* 2021). This management fashion is a key driver of achievement in modern organizations (Alharbi *et al.* 2020). It embodies a sort of leadership devoted to pleasurable objectives by raising the abilties of followers, encouraging their involvement thru motivation, highbrow stimulation, and empowerment, ultimately fostering a lifestyle of innovation (Li *et al.* 2019; Ravangard *et al.* 2016). Common tendencies of these leaders encompass the capability to inspire and uplift their fans, trade the reputation quo of labor settings, and show off determination, charisma, and a willingness to take risks in tough conventional operational models in favour of introducing modern practices that mirror the chief's vision. Early research recognized a framework of seven key attributes: articulating an imaginative and prescient, staff development, imparting help, empowering employees, fostering innovation, main by way of example, and possessing charisma (Carless *et al.* 2000; Podsakoff *et al.* 1990).

TL has a profound effect on individual and team performance, as well as overall organizational development. It encompasses various psychological and job quality behaviours, such as employee job satisfaction (Pooya and Bazrgari 2016; Zhang *et al.* 2021). Leaders who exhibit transformational behaviour are believed to have a shared vision, promote a positive organizational culture, and encourage innovation through their authentic actions (Bass and Bernard 1985). The availability of strategic goals can significantly enhance SS, especially in a variable leadership environment. A lack of TL may additionally weaken the connection between strategic goals and their realization. Without clean direction from leaders, personnel would possibly conflict to apprehend and align their tasks with broader targets. This should imply that strategic goals aren't correctly influencing strategic consequences. A critical issue of SC is an agency's ability to align day by day operations with long-time period goals. According to this attitude, TL is critical for SC to function efficiently and make contributions to SS. A sturdy correlation exists between progressive leadership and powerful SC techniques. Transformational leaders create an atmosphere of trust, open communication, and collective responsibility. Once the importance for organizational development is understood, the SC process will be adopted and adhered to. While SC doesn't restrict individuals, creative leaders can use it to motivate their teams to excel. However, some practitioners see these strategies as overly strategic and restrictive rather than helpful in terms of value creation (Menguc *et al.* 2007). A recent theoretical framework suggests that strategic flexibility acts as an intermediary mechanism between TL and organizational performance. This study highlights the importance of shaping TL behaviour to enhance strategic flexibility and overall organizational performance (Li *et al.* 2016). It emphasizes the role of TL in maintaining the vision of the organization and enhancing psychological motivation among followers or junior employees, thus increasing performance Some researchers have found inspiration, motivation, and attitude flexibility in transformational leaders can affect employee perceptions and interactions with SOs (Shamir *et al.* 1993; Howell and Avolio 1993) and the author. Therefore, the third hypothesis is proposed as follows:

H3. There is a significant moderating role of TL between strategic objectives and strategic success.

Clearly defining a mission and vision in terms of high expectations, setting high goals, and enabling employees to take ownership and responsibility for their work and performance measures Measurement frameworks such as TL measures and Global Leadership and Organizational Behaviour excellence (GLOBE) 4 Such leadership often has a motivating effect on work behaviour, helping employees improve their skills in smart, intelligent, and practical ways that enable them to confront and overcome work-related challenges role (Bass & Bernard 1985, Li *et al.* 2016). For example, encouraging "thinking outside the box" empowers their independent decision-making and increases their cognitive abilities.

In the hospitality enterprise, the advent of TL has drastically impacted enhancing worker involvement, task pleasure in any respect ranks, and the general performance of organizations. Leaders who exhibit those traits inspire aid, group collaboration, sharing of reviews, autonomy in decision-making, and the implementation of innovative thoughts. This fosters a lifestyle of innovation amongst team of workers participants (Emamgholizadeh *et al.* 2011). TL plays a key role in building employees' intellectual capacity and innovation, creating a productive workplace where employees feel knowledgeable, competent and encouraged to work with potential. Furthermore, empowered employees feel more proactive because they are given the freedom to make their own decisions. There is a call to re-examine traditional design approaches that can lead to feelings of powerlessness and limit creativity. Research has shown that transformational leadership is key to effective organizational change by instilling a sense of urgency, providing clear direction, establishing a vision, and providing immediate encouragement on (Tayal *et al.* 2018; Sayli and Tüfekçi 2008). Another study found that TL positively relates to team psychological safety and team learning behavior in Ghana (Kumako and Asumeng 2013), and offsets the effects of time pressure, work life balance and burnout among employees in Germany, and this effect decreases as TL increases (Syerk *et al.* 2013). TL has been shown to reduce stress and fatigue and improve employee performance. Although its moderating role may seem limited, its impact is profound (Howell and Avolio 1993; Malik and Farooqi 2013). Therefore, the concluding hypothesis is as follows:

H4. There is a significant moderating role of TL between strategic control and strategic success.

2. Methods

2.1. Measures

This study used different parameters to examine the variables: the TL measure was adopted from Carless *et al.* (2000), with a 5-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). SOs were measured using a 4-item scale adopted from Novak (2020), which also has a 5-point Likert scale. SC was measured using a 6-item scale based on Moses Akilo *et al.* (2023), again using a 5-point Likert scale. The SS is measured as a second factor, which includes the first three dimensions: survival, change, and growth. Each of these three dimensions consists of 5 items, adapted from Abuzaid (2018) and assessed using a 5-point Likert scale (see Appendix).

To ensure validity, the questionnaire was translated from English to Arabic and then back to English by academic instructors. The products were also tested and approved by industry experts. The final questionnaire was developed on Google Forms, to ensure participant eligibility, and distributed to participants via social media. Participants were informed that their participation was voluntary and that their responses would be anonymous and confidential.

2.2. Participants and Process of Data Collection

Data for this study were collected using a web-based questionnaire (Google Forms) distributed among employees at various levels in twenty-eight hotels, including three-, four-, and five-star hotels of Al-Medina and Al-Ula cities in the Kingdom of Saudi Arabia.

Table 1. Demographic profile

	No. of respondents=378	Frequency	%
Gender	Male	279	73.9
	Female	99	26.1
Marital status	Married	258	68.3
	Single	120	31.7
Age	35 and less	199	52.7
	36-45	131	34.6
	46-54	39	10.3
	55 and above	9	2.4
Education level	Diploma/Intermediate	213	56.3
	Bachelor	155	40.9
	MSc/PhD	10	2.8
Years of experiences	< 4	191	50.4
	4 to < 7	157	41.5
	7 to < 10	24	6.4
	10 ≤	6	1.7

Source: author data analysis

The questionnaire was distributed on social media platforms such as Facebook, WhatsApp and by email. The questionnaire was distributed to a total of 560 people, and 378 valid responses were obtained, resulting in an average response rate of 67.5%. This is considered sufficient, since Sekaran (2013) and El Nagar *et al.* (2022) stated that a response rate of 30% is adequate for most studies.

Table 1 shows the demographics of the study population, indicating that 73.9% were male and 68.3% were married. Regarding age distribution, the majority (52.9%) were 35 years of age or younger. The main level of education among the respondents was a diploma or intermediate degree, with 56.3% and 40.9% of those with a bachelor's degree Data on work experience shows that 50.4% of the participants had experience of less than 4 years and 41.5% had been working for four to less than 7 years on the job.

2.3. Data Analysis Methods

This study used partial least squares (PLS) method, specifically SmartPLS 3.0 software, to evaluate measurement models and structural models PLS is a variable-based method for structural equation modelling (SEM), excellent in relationship a in analysing the complexity between multiple variables. This is particularly good for data that do not follow a normal distribution (Hair *et al.* 2019; Ringle *et al.* 2012), when modelling multiple latent variables with indicators (Hair *et al.* 2019), and when considering higher order concepts (Becker *et al.* 2013). SmartPLS is also suitable for exploratory studies where causal relationships are not yet fully established (Hartmann *et al.* 2010) and is recommended for use in studies with small samples due to variance based PLS statistical method for SEM (Hair, 2011) and the author. The study further explores the hypothesized correlational relationships between the mechanism variables, with PLS identified as the most appropriate statistical method for confirming these theoretical relationships.

Moreover, the observe treats SS as a better-order assemble, constituted of version, increase, and survival, given its abstract nature that eludes direct measurement. Conversely, SC, SOs, and TL are taken into consideration first-order constructs, without delay measured via precise items. The evaluation proceeded in two ranges: to start with assessing the size version (or outer model in PLS-SEM terminology) to confirm the assemble items, followed with the aid of an examination of the structural version to investigate the relationships among the constructs. The resulting model diagram from the analysis is depicted in Figure 2.

3. Results

3.1. Assessment of Outer Model

The evaluation of the dimension model, additionally called the outer model, concerned the validation of the version via the assessment of convergent and discriminant validity for the latent variables. The evaluation of assemble reliability turned into conducted via analyzing Cronbach's alpha (α) and composite reliability (CR) scores (Hair *et al.* 2019). To establish convergent validity, factor loadings were required to exceed zero.70, and the average variance extracted (AVE) had to be extra than zero.50. Table 2 displayed all the essential metrics, along with loadings, Cronbach's alpha, composite reliability, and common variance extracted, all of which exceeded the advocated thresholds, confirming the validity of the measures.

Table 2. Construct reliability, validity, and multicollinearity

Factor	Loadings	α	CR	AVE
Thresholds	>0.7	>0.7	>0.7	>0.5
Adaptation		0.896	0.923	0.708
ADA1	0.864			
ADA2	0.868			
ADA3	0.878			
ADA4	0.855			
ADA5	0.732			
Growth		0.869	0.905	0.658
GRO1	0.702			
GRO2	0.861			
GRO3	0.856			
GRO4	0.807			
GRO5	0.819			

Factor	Loadings	α	CR	AVE
Thresholds	>0.7	>0.7	>0.7	>0.5
Survival		0.860	0.900	0.643
SUR1	0.812			
SUR2	0.712			
SUR3	0.840			
SUR4	0.838			
SUR5	0.802			
Strategic control		0.900	0.924	0.669
SC1	0.839			
SC2	0.740			
SC3	0.828			
SC4	0.809			
SC5	0.847			
SC6	0.837			
Strategic objectives		0.898	0.929	0.766
SOs1	0.871			
SOs2	0.888			
SOs3	0.865			
SOs4	0.876			
Transformational leadership		0.907	0.926	0.641
TL1	0.760			
TL2	0.826			
TL3	0.772			
TL4	0.856			
TL5	0.820			
TL6	0.773			
TL7	0.791			

Source: author data analysis

In addition to convergent validity, the study also established discriminant validity using two methods as shown in Table 3:

- Fornell-Larcker Criterion: The square root of the Average Variance Extracted (AVE) of each construct is greater than the correlation between constructs. This means that the dimensions differ from each other, exhibiting discriminatory validity (Fornell & Larcker 1981).

- Heterotrait-monotrait (HTMT) ratio of all constructs were below the recommended threshold of 0.90. This further supports the evidence for discrimination, as in the direction of (Hair *et al.* 2019).

In summary, both HTMT ratio and the Fornell-Larker criterion analyses confirmed that the measurement model exhibited strong discriminatory validity and was significantly embedded in the model, which considered the process being performed various aspects of the investigation.

Table 3. Assessment of the discriminant validity

Fornell-Larcker	1.	2.	3.	4.	5.	6.	HTMT	1.	2.	3.	4.	5.	6.
1. Adaptation	0.841						1. Adaptation	NA					
2. Growth	0.752	0.811					2. Growth	0.849					
3. SC	0.523	0.466	0.818				3. SC	0.578	0.520				
4. SOs	0.421	0.311	0.385	0.875			4. SOs	0.462	0.350	0.424			
5. Survival	0.543	0.478	0.551	0.316	0.802		5. Survival	0.625	0.553	0.624	0.360		
6. TL	0.606	0.501	0.630	0.429	0.540	0.801	6. TL	0.656	0.559	0.691	0.481	0.604	NA

Source: (author data analysis).

The method of forming and confirming the SS, a second order constructs become completed in two phases. SS changed into at the beginning shaped from three first-order constructs: variation, growth, and survival. The introduction of 2d-order constructs was achieved the usage of a -level disjoint technique, following the guidelines provided by Sarstedt *et al.* (2019). The evaluation of the formative 2nd-order construct was finished by way of checking the variance inflation thing (VIF) for collinearity many of the related indicators to the formative assemble and making sure they were underneath five, as well as checking the outer weights of the indicators, as recommended through Sarstedt *et al.* (2019). Based on the information in Table 4, all reflective and formative constructs tested convergent validity. After the second-order constructs had been generated, their discriminant validity become evaluated using the HTMT Ratio, and Fornell-Larcker criterion. The outcomes, displayed in Tables five, additionally proved to be legitimate, as in line with Hair *et al.* (2019).

Table 4. Construct reliability and validity after generating second-order constructs

Constructs	Items	Scale type	Loadings/ weights	CR	AVE	VIF
SS	Adaptation	Formative	0.568	NA	NA	2.560
	Growth		0.102			2.338
	Survival		0.485			1.441
SC	SC1	Reflective	0.839	0.924	0.669	NA
	SC2		0.739			NA
	SC3		0.828			NA
	SC4		0.810			NA
	SC5		0.848			NA
	SC6		0.837			NA
SOs	SOs1	Reflective	0.870	0.929	0.766	NA
	SOs2		0.887			NA
	SOs3		0.866			NA
	SOs4		0.876			NA
TL	TL1	Reflective	0.763	0.926	0.641	NA
	TL2		0.831			NA
	TL3		0.769			NA
	TL4		0.857			NA
	TL5		0.812			NA
	TL6		0.777			NA
	TL7		0.791			NA

Source: author data analysis

Table 5. Discriminant validity (after generating second-order constructs)

Fornell-Larcker	SC	SOs	SS	TL	HTMT	SC	SOs	TL
SC	0.818				SC	NA		
SOs	0.386	0.875			SOs	0.424		
SS	0.611	0.424	NA		TL	0.691	0.481	NA
TL	0.629	0.432	0.657	0.801				

Source: author data analysis.

Figure 2. Measurement model diagram
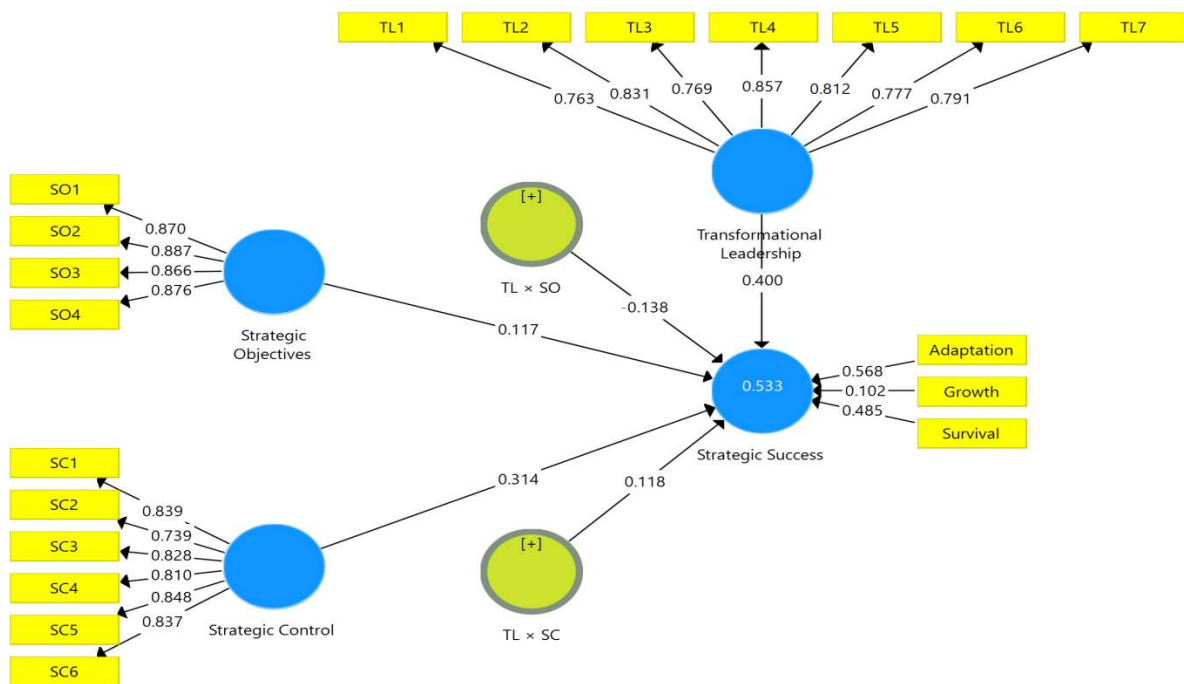
Source: author data analysis.

3.2. Hypotheses Testing (assessment of inner model)

The results of the structural model analysis included β, t-statistics, and their associated p-values. The R-squared values indicated that among the endogenous construct, approximately 53.3% of the variance in SS was explained by exogenous constructs in the model:

The results of the hypothesis test showed that:
- SOs positively and significantly affected SS (β = 0.117, p < 0.05).
- SC positively and significantly affected SS (β = 0.314, p < 0.001).

The results of the moderating effect analysis indicated that:
- TL negatively and significantly affects (β = -0.138, p < 0.01) the relationship between SOs and SS.
- TL positively and significantly affected agreement between SC and SS (β = 0.118, p < 0.01).

Thus, this study supported hypotheses H1, H2, and H4, as shown in Table 6.

Table 6. Results of the structural model (direct and moderator effects)

Hypothesis	Path	B	T Statistics	P-value	Supported?
Direct paths					
H1	Strategic objectives -> Strategic success	0.117	2.169	0.031	Yes
H2	Strategic control -> Strategic success	0.314	5.244	0.000	Yes
Moderator effect					
H3	TL × SOs -> Strategic success	-0.138	3.236	0.001	NO
H4	TL × SC -> Strategic success	0.118	2.958	0.003	Yes

Source: author data analysis.

Figures 3 and 4 show the moderating effects of TL on the relationship between SOs/SC and SS. Because the effect of TL on the relationship between SO and SS was negative. This implies that SOs will effectively ensure the availability of SS if the hotel has a low TL. In contrast, TL has a positive moderating effect on the relationship between SC, and SS. This means that SC will be more likely to be SS if the hotel has a higher TL. In summary, the findings display that the moderating function of TL differs relying at the strategic component being considered. TL has a bad moderating impact at the SOs-SS relationship, however a high-quality moderating impact on the SC-SS relationship.

Figure 3. Slope analysis for TL × SOs
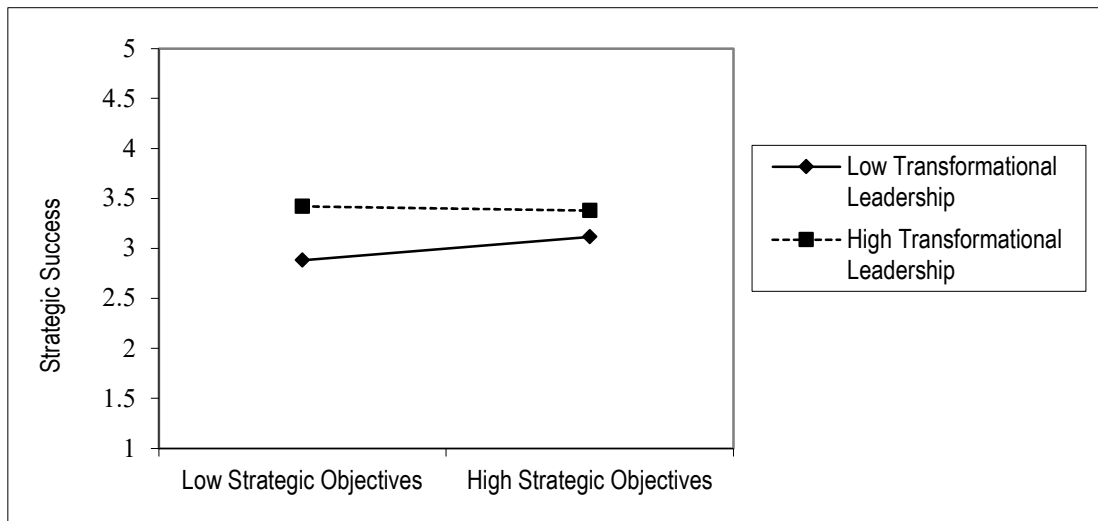
Source: author data analysis.

Figure 4. Slope analysis for TL × SC
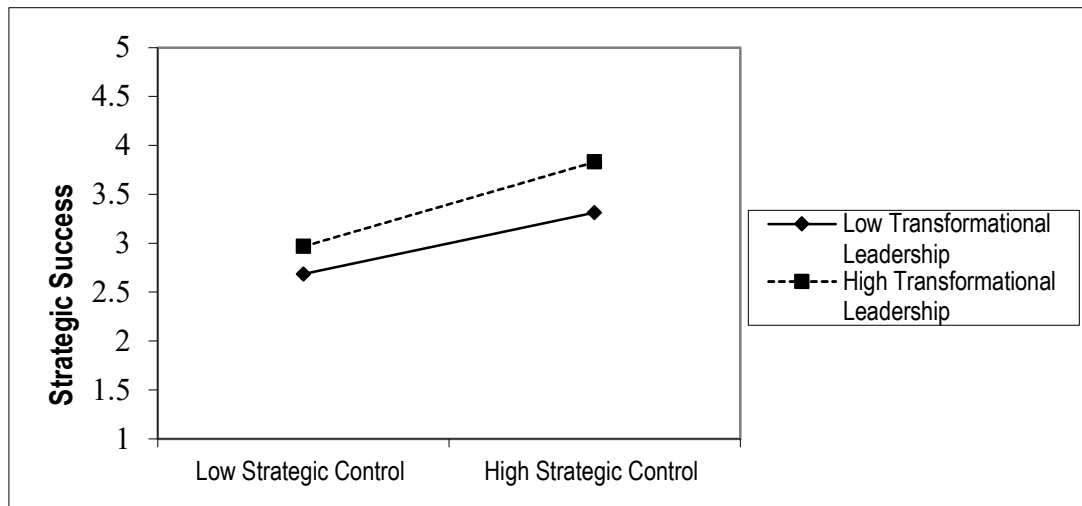
Source: author data analysis.

4. Discussion

This study aims to enhance the existing literature by examining the complex relationships between SOs, SC, TL, and their joint influence on SS acquisition. Although a number of studies have examined the individual effects of strategic components and SC, there are still areas of ambiguity regarding these variables (Alao and Alao 2013; Li *et al.* 2019; Nowak 2020). This study aims to fill this gap by examining the role of TL in moderating role in the relationship between SOs, SC and SS. It seeks to provide a comprehensive understanding of how hotels in Saudi Arabia can enhance their overall strategic success by aligning their SOs, implementing effective SC strategies, and facilitating leadership influence implementing it by focusing on this collective approach. Findings showed that all hypotheses except the effect of TL on the relationship between SOs and SS were supported.

Firstly, we found that SOs have a significant influence on SS. This result is consistent with some previous studies. Strengthening the core company, using the ecosystem, and investigating new markets and technology are the strategic goals that may be pursued via corporate venture capital investments (Pinkow and Iversen 2020). They concluded it by providing a thorough summary of the SOs that corporate venture capital might pursue. Another finding was discovered by Franklin and Al-Kassem (2011) who showed that to achieve better market performance, hotels in the Saudi hospitality sector must have a strategic direction. Although strategy orientation is often emphasized as being crucial to enhancing market performance, choosing a strategic direction may be difficult in real life. Businesses with a primary strategy orientation toward competition or their clients are probably only seeing a small portion of the market. The process of strategic planning includes setting specific objectives,

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assessing the internal and external surroundings, formulating strategies, carrying out plans, and periodically assessing and modifying these elements. Additionally, personnel need to be agile and adaptable to remain competitive and react to new possibilities and threats (Jung and Sosik 2002). According to Jarzabkowski and Balogun (2009), goal-setting may also encourage internal discussions and compromises, leading to a decision on a company's strategic direction.

Secondly, the positive relationship between SC and SS was found to be statistically significant. Similarly, Olowe (2017) asserts that SC improves organizational efficiency by guaranteeing that all personnel and strategic units inside the company adhere to the established SC. Officers evaluate external and internal difficulties surrounding the organization at some point in the strategy control process and look for information on how to design selected strategies that will help them achieve their desired outcomes. Simons (2019) states that an organization's ability to accomplish its long-term goals is significantly influenced by SC or SC methods. The methods and procedures in place for SC determine how quickly and effectively a company may accomplish its SOs. Additionally, SC systems enable the business to change more quickly and adaptably. Only in situations where trust is strong - which is earned via TL - can SC be used effectively. If followers think their leaders are watching out for them and putting in place clever controls to make sure the group succeeds, they will be more inclined to follow rules (Purcell 2014). According to McAdam and Scott, (2009), since they influence every stage of the strategic management process, strategy control procedures are crucial to a company. Alao and Alao (2013) discovered that re-engineering the whole system via SC and the balanced scorecard as an employee performance assessment system is necessary.

Thirdly, we suppose that TL moderates the relationship between SOs and SS. However, the result was not significant, and we found a negative impact of TL as moderator. This may be due to its distinct cultural background, Saudi Arabia may not be a good fit for the idea of TL, which is centred on the West. Local cultural quirks might affect how TL is received and how successful it is in an organizational environment (Khan and Varshney, 2013; Valentine *et al.* 2024). Numerous academic works have examined leadership-related topics in recent years, and the significance of leadership has become a key concept when it comes to managing businesses and keeping up with the rate of change. SOs, the result is not consistent with the study of Bass and Bernard (1985) who stated that transformational leaders are recognized for their authentic behaviours that foster a common vision, support a constructive and socially acceptable workplace culture, and stimulate creativity among their subordinates. Our result also contradicts the findings of García-Morales *et al.* (2018) who found that setting SOs may further support SS in an environment where leadership is always shifting. Creative leaders may inspire their groups by laying out the long-term goals of the company. Another opposite conclusion was given by Li *et al.* (2016), who pointed out that a common feature of TL is pushing back against the status quo and encouraging creativity. SS may suffer in a conservative company environment such as Saudi Arabia where opposition to change may exceed the potential advantages of TL.

Lastly, we found that TL moderates the relationship between SC and SS, and the result is aligned with the previous literature. According to Menguc *et al.* (2007), if employees understand how important SC measures are to the expansion of the company, they are more inclined to accept and follow them. While SC does not imprison people, transformational leaders may utilize it to inspire their team members to reach greater goals. A company needs TL to gain SC and SS. SC techniques may encounter opposition or be abandoned if there are no leaders who can create a culture of commitment and shared purpose. Our findings are also consistent with Emamgholizadeh *et al.* (2011) who discovered that in the hotel sector, the early forms of TL are mostly effective in promoting employee engagement, job satisfaction among workers at all levels, and overall organizational success. These leaders also often place a strong emphasis on collaboration, support, sharing experiences, autonomy in decision-making, and approving the execution of ideas - all of which may encourage creative behaviour on the part of staff members. An effective work environment where employees feel knowledgeable, competent, and motivated to exercise empowerment is produced by TL. Furthermore, since they have more autonomy in making choices, workers who feel more empowered take the initiative. Conventional organizational processes that reduce workers' sense of helplessness make them less productive and prevent them from reaching their full creative potential (Tayal *et al.* 2018; Sayli and Tüfekçi 2008).

Conclusions

The main focus of the study is the employees of the hotel sector in Saudi Arabia. The aim of the study was to investigate how SOs, and SC increase the strategic success of an organization. Moreover, it also examines the relative effect of TL on facilitator. Our results indicated that SOs, and SC are important contributors to SS. Although TL shows a negative moderating effect on the relationship between SOs, and SS, the moderating effect

is positive in the case of SC. Early iterations of TL in the hotel industry are more successful in creating employee engagement, job satisfaction across the enterprise, and overall organizational performance Strong leadership relationships in organizational settings The main part of TL. It suggests that the influence of the leader on strategic outcomes can change according to the circumstances and variables in the game. Firms in the hospitality industry, particularly in Saudi Arabia, stand to benefit from studying the interplay of strategic values, SC and TL. Decision-making processes related to goal setting, care planning, and leadership program development can benefit from this knowledge.

Implications

Managerial Implications

Based on the findings, the study proposed several strategies that can motivate and enable managers, managers and employees to improve the SS of hotels in Saudi Arabia. First, the study reveals a significant positive relationship between SOs, and SS. Managers should prioritize the communication of SOs throughout the organization for better communication, as this clarity can have a positive impact on the SS. They need to ensure that employees understand and participate in the broader objectives. Managers can use training programs to increase employees' understanding of strategic goals and equip them with the skills needed for effective strategic management to create an optimal work environment and it works (Franklin and Al-Kassem 2011). When designing a policy, Saudi Arabian culture and the possible influence of sociocultural norms on the commissioning and implementation of SOs should be considered. Second, there is a significant positive correlation between SC and ST. Managers can establish robust SC systems to monitor and measure goal achievement, including frequent performance appraisals and feedback systems (Alao and Alao 2013). Real-time monitoring mechanisms can be developed to immediately detect deviations from plan, enabling faster and more stable responses and aligning the company with objectives Third, a negative moderating effect of TL was observed between SOs and SS. This is because TL concepts based on Western perspectives may not be entirely appropriate for Saudi Arabia due to its unique cultural history Cultural nuances may affect the acceptability and effectiveness of TL in the organization (Khan and Varshney 2013). Managers should prioritize objective effectiveness because research has shown that TL does not change the relationship between SOs, and SS. Finally, a significant positive effect of TL on the relationship between SC and SS was found. Therefore, managers should encourage open discussions about SC strategies among employees and transformational leaders. TL fostered shared purpose and commitment among employees, and made employees realize the critical importance of SC to the success of the firm.

Theoretical Implications

We believe our combined approach has the potential to significantly advance theory and research. The conceptual implications of the study help us to understand the role of TL in a more complex way in strategic leadership. When developing and enhancing theoretical frameworks in these areas, these insights encourage researchers and practitioners to consider the contextual nuances of leadership, local dimensions and intergroup interactions. Scholars are encouraged to explore which TL best serve the moderator in a particular organizational context when it comes to the relationship between SOs, and SS. Acknowledging context contributes to the effectiveness of current leadership theories. The integration of organizational management strategies into the theoretical framework of the research is an important step in the development of SS. A comprehensive understanding of the relationships among management strategies, leaders, and strategic goals can be incorporated into theoretical models in strategic management.

Future Needs and Research Limitations

The research provides both theoretical and practical implications for scholars and managers. Some limitations of our study, however, can be addressed by a potential researcher to improve our understanding. The study's emphasis on Saudi Arabia's hotel sector employees alone may have limited the applicability of the results to other contexts or other economic sectors. A more diverse sample size can improve the external validity of the findings. Research has shown that transformational leaders have moderate effectiveness, but the mechanisms behind these effects have not been fully explored. Subsequent research could examine specific TL characteristics and behaviours that affect the relationship between SC and SS. Contextual factors that may affect the relationships in question were not thoroughly examined in this study. A more robust interpretation of the results can be achieved by considering variables such as the competitive environment, organizational size, and industry dynamics Longitudinal studies can shed light on how TL, SC, and SOs are affected effect of SS in the long run.

Credit Authorship Contribution Statement

The author attests to having sole responsibility for the idea and layout of the paper, gathering empirical data, analysing, and interpreting the findings, and preparing the final manuscript preparation.

Declaration of Competing Interest

The author states that none of the known financial conflicts or interpersonal ties could have had an impact on the work presented in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Appendix. Questionnaire

Strategic Objectives

		Strongly disagree	disagree	Neutral	Agree	Strongly agree
SOs1	Employees at my hotel are well-versed in and value our mission statement.					
SOs2	My hotel's staff understand and prioritize our annual goals.					
SOs3	My hotel's staff comprehend and prioritize our action plans.					
SOs4	My hotel's staff comprehend and prioritize our action plans.					

Strategic control

SC1	Employees at my hotel work on the creation of strategic control systems.					
SC2	My hotel conducts regular assessments of internal control systems and procedures.					
SC3	My hotel has control systems in place to monitor the external environment.					
SC4	My hotel has implemented control systems to monitor and assess plan milestones.					
SC5	In my hotel, all levels of management contribute to the design and selection of performance assessment methods.					
SC6	My hotel has control measures in place to regularly assess the validity of strategy assumptions.					

Strategic success

Survival

SUR1	The hotel can deal with issues and anticipate potential risks.					
SUR2	The hotel prepares a variety of situations to provide alternate survival strategies.					
SUR3	The hotel regularly monitors external environmental data.					
SUR4	The hotel examines its capabilities on a regular basis in order to address any performance shortcomings.					
SUR5	The hotel has particular capabilities to assure its continued success.					

Adaptation

ADA1	My hotel has extra capacities to meet the changing and renewable demands of its guests.					
ADA2	My hotel has the flexibility to adapt its aims and goals as indicated by senior management.					
ADA3	My hotel can immediately adjust to events that occur unexpectedly in the internal business environment.					
ADA4	Myr hotel can constantly adjust to market demands.					
ADA5	My hotel can respond to changes in the surrounding environment.					

Growth

GRO1	My hotel can penetrate new markets.					
GRO2	My hotel offers a variety of products and services to fulfil the demands of a wide range of consumers.					

GRO3	My hotel aims to accomplish both backward and forward integration.					
GRO4	My hotel is looking to develop collaborations with competitors.					
GRO5	My hotel can acquire a competitor organization in the same business.					
Transformational Leadership						
TL1	My leader presents a clear and optimistic view of the future.					
TL2	My leader views employees as individuals and supports and promotes their development.					
TL3	My leader encourages and recognizes personnel.					
TL4	My leader encourages trust, engagement, and collaboration among team members.					
TL5	My leader supports fresh problem-solving approaches and challenges preconceptions.					
TL6	My leader is clear about his/her ideals and demonstrates what he/she preaches.					
TL7	My leader instils pride and respect in others while also inspiring me with his high level of competence.					

Dark Triad Personality Traits and Workplace Outcomes: Evidence from the Hospitality Industry

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Abstract: The Dark Triad Personality Traits - psychopathy, narcissism, and Machiavellianism - have a significant impact on workplace dynamics. Psychopathy involves egoistic and disappointing interpersonal contact; Machiavellianism involves devious communication strategies; and narcissists use harmful tactics to gain attention and dominate teams. This study investigates the linking of DTPTs with work outcomes in the context of Jordan's hospitality sector. With the use of a standardised questionnaire, 387 hotel staff members provided quantitative data. SPSS was used to test the proposed hypotheses. Findings demonstrated that, whereas DTPTs had no effect on OCB, they do positively influence JB and TI. These results have significant theoretical and practical implications for Jordan hotels. The study recommends that to combat DTPTs in hotels, proactive measures like thorough hiring processes, investing in training programmes, and establishing clear organisational values can help. These measures can identify potential traits, foster a positive work culture, and discourage behaviours aligned with DTPTs, ultimately improving overall staff satisfaction, reducing turnover, and increasing JB.

Keywords: psychopathy; organizational citizenship behavior; machiavellianism; turnover intention; narcissism; job Burnout.

JEL Classification: Z32; Z11; R11.

Introduction

The dark triad is composed of psychopathy, narcissism, and Machiavellianism, which are three distinct yet partially overlapping concepts (Paulhus and Williams 2002). These traits are often associated with negative outcomes in the workplace, including decreased job performance, increased turnover, and poor relationships with coworkers. In the hospitality industry, where employees are often in direct contact with customers, the impact of these traits can be particularly significant. For example, employees with high levels of narcissism may be more likely to engage in counterproductive work behaviours, such as bullying or manipulating coworkers, which can lead to a toxic work environment and decreased job satisfaction for other employees (Rosendale *et al.* 2022). Additionally, employees with high levels of Machiavellianism may be more likely to engage in unethical behaviour, such as stealing or lying, which can damage relationships with coworkers and customers and lead to a lack of trust within the organization. Furthermore, employees with high levels of psychopathy may be more likely to engage in aggressive or violent behaviour and may be less likely to follow rules and procedures, which can create

a dangerous and unpredictable work environment, and can put both employees and customers at risk (Szabo *et al.* 2021). Understanding the relationship between Dark Triad traits and workplace outcomes is essential for organizations in the hospitality industry to effectively manage their workforce and create a positive and productive work environment.

Szabó *et al.* (2022) has also established a correlation between subclinical narcissism and heightened mental resilience, tenacity, and occupational drive. Moreover, narcissism differs from the other two dark triad elements concerning the conditions of self-identity: people with high narcissistic traits exhibit an overindulgence in depending on outside sources to form their sense of self. To maintain their sense of value, they are constantly in need of affirmation and attention from others (Bogaerts *et al.* 2021). Nevertheless, it is imperative to acknowledge that there is still an absence of a universally accepted definition for this construct (Crowe *et al.* 2019).

There are numerous approaches to defining narcissism, and in recent times, models that incorporate two or three components have gained popularity. However, the three-component models propose that neuroticism/vulnerability, agentic extraversion/exhibitionism, and antagonism/entitlement comprise narcissism. According to Crowe *et al.* (2019), the two-component model makes a distinction between the grandiose and vulnerable elements of narcissism. This is significant because disparate empirical accounts frequently result from measuring various construction components. The assessment used in the later research (the Short Dark Triad; Jones and Paulhus 2014) is more focused on the antagonistic than the agentic dimensions of narcissism (Truhan *et al.* 2021). It is reasonable to suggest that the positive relationships shown between narcissism and qualities associated with achievement, such as resilience and extraversion, are limited to the extraverted, agentic side of narcissism and do not account for the more susceptible and aggressive components of the personality. For example, Sękowski *et al.* (2021) discovered a negative correlation between susceptible narcissism and resilience, while Back (2018) presented subtle differences between the antagonistic and agentic facets of grandiose narcissism in regard to competition and admiration. During the conversation, we will go over this issue again.

Personality characteristics have been established as effective predictors of outcomes within the workplace (Barrick and Mount 1991; Hill and Besser 2019). Contemporary scientific investigations frequently address the presence of malevolent personalities in professional settings. The results (O'Boyle *et al.* 2012; Szabo *et al.* 2021) consistently demonstrate positive nexuses between malevolent personality traits and unfavourable workplace outcomes, which is not surprising.

Furthermore, a multitude of studies (Grijalva and Newman 2015; Spain and Harms 2018; Szabo *et al.* 2021) have concentrated on the associations between the more sinister aspects of personality (psychopathy and narcissism) and workplace outcomes, encompassing job satisfaction, job Burnout, job performance, leadership, counterproductive work behaviours, and turnover intention. This is crucial because, despite extensive overlap across these dimensions, these darker parts of personality frequently involve goals, objectives, interests, and strategies that are difficult to explain by traditional models like the Big Five (O'Boyle *et al.* 2015).

In the last twenty years, there has been an increasing interest in the darker aspects of personality, specifically narcissism, psychopathy, and Machiavellianism, which together make up the Dark Triad and are typified by manipulation, entitlement, and superiority. In this context, Jones and Paulhus (2011) indicated that A desire to take advantage of and manipulate people, disagreeableness, callousness, egocentrism, deceitfulness, deficits in empathy, absence of honesty and humility, and a concentration on self-centred goals are characteristics of the Dark Triad personality. Numerous behaviours and interpersonal tendencies have been found to be predicted by these personality traits.

Scholars have expanded the roster of "dark" personality characteristics to encompass sadism and spitefulness, which have gained increased attention in recent years (Buckels *et al.* 2013). These characteristics share fundamental elements such as interpersonal manipulation and callousness, and some argue that they are specific manifestations of a common "Dark Factor of Personality". Sadism and spitefulness are occasionally grouped with narcissism, Machiavellianism, and psychopathy (Marcus *et al.* 2018). Often seen as negative traits, dark personality traits may really be specialized psychological adaptations that allow people to take advantage of social niches in order to overcome evolutionary obstacles (Jones and Figueredo 2013). These traits, which include callousness and interpersonal manipulation, make it easier to take resources at the expense of the larger social environment. These characteristics might be motivated by personal goals, which could jeopardize social exchange patterns that improve how well companies operate (O'Boyle *et al.* 2012).

Employees contribute their expertise and knowledge to organizations with the expectation of receiving both direct and indirect rewards. Elevated levels of narcissism, psychopathy, and Machiavellianism, may result in unethical behaviours in the workplace, exploiting "dark niches" in employment settings, despite the absence of clear links between sadism and spitefulness (Kessler *et al.* 2010).

Past research (Spain and Harms 2018) has examined the association between workplace outcomes, and dark personality features, but insufficient attention has been devoted to understanding the mechanisms through which these features manifest in specific behaviours and attitudes. This study focuses on the challenges in personality functioning as outlined in the Diagnostic and Statistical Manual of Mental Disorders, which has been extensively studied for its pathological personality traits, but its challenges in personality functioning have received less attention (Wright and Krueger 2018). These challenges can be categorized as impairments in self-functioning and interpersonal functioning. These impairments are considered fundamental characteristics of personality pathology, and dark personality features are often linked to similar difficulties. The goal of this study is to investigate whether the difficulties in personality functioning outlined in the DSM-5 may partially explain the connections between dark personality features and workplace outcomes (Ewing *et al.* 2016).

The Dark Traits model, originally conceptualized as individual differences in entitlement, and manipulation has faced scrutiny regarding its incremental validity. In general, the HEXACO model - which includes emotionality, agreeableness, and honesty-humility - performs better than the Big Five plus Dark Triad model. To have a deeper knowledge of the personality determinants underpinning negative workplace outcomes beyond standard models, the study intends to investigate the distinct effects of dark personality traits on unpleasant workplace outcomes beyond the HEXACO model. The purpose of the study is to clarify this.

The types of DTPTs including narcissism, psychopathy, Machiavellianism, represent a significant phenomenon in the fields of business and organizational behaviour. Organizations will be better equipped to address the negative consequences associated with individuals displaying these traits and capitalize on any positive aspects of their behaviour if they possess a more comprehensive understanding of the individual and collective impacts of these individuals (Rosendale *et al.* 2022). DTPTs have their origins in the fields of psychology and sociology much like the domain of organizational behaviour itself. The study of these traits has exerted a significant influence on the body of research within this discipline. Delroy Paulhus and Kevin Williams, scholars from the University of Columbia, coined the concept "Dark Triad" in 2002 as a response to the notion that these three personality types were interchangeable and shared numerous characteristics (Paulus and Williams 2002; McHoskey *et al.* 1998).

The connection between DTPTs and work outcomes has not received extensive investigation. This current research aims to address this gap in existing literature. The investigation of the link between DTPTs and outcome variables is the focus of inquiry here. Building upon previous research, it is reasonable to anticipate that employees exhibiting different dark traits are driven by distinct motivations in their work (Jonason *et al.* 2014, 2015). Furthermore, several recent research have looked into the connection between motivational regulations at work and job Burnout (Rawolle *et al.* 2016; Fernet *et al.* 2017). Nevertheless, the outcomes thus far are uneven.

To accomplish the goal of this study, we first provide a brief overview of previous research on DTPTs. Next, we develop hypotheses by examining the relationship between DTPTs and the primary outcome variables (job Burnout (JB), turnover intention (TI), and organizational citizenship behaviour (OCB). We finish with a discussion of the theoretical and practical consequences of our work, which comes after the presentation of our findings.

1. Literature Review

1.1. The Concept of Dark Triad Personality Traits

The study's theoretical foundation is based on the theory of threatened egotism and ethical climate theory (ECT), which suggest workplace threats to egos lead to negative behaviour and diminish positive ones (Baumeister and Campbell 1999). ECT suggests that an ethical climate, including culture, rules, norms, and policies, can reduce negative behaviour (Chughtai and shah 2020). ECT addresses the ethical climate of the company, which affects people's commitment, satisfaction, well-being, and attitudes, consequently, it raises employees' morality, responsibility level, and positive behaviours while lowering their negative behaviours, such as egoism, aggression, and emotional exhaustion. Because dark personalities have highly inflated self-esteem, they worry more about approval from their superiors and coworkers to tolerate and uphold their inflated self-esteem and the ethical culture of the company (Yang *et al.* 2014; Chughtai and Shah 2020).

DTPTs significantly impact workplace dynamics. Psychopathy entails egoistic and disappointing interpersonal contact, immature behaviour, and a lack of feelings (Paulhus and Williams 2002). Machiavellianism involves devious communication strategies to improve one's attractiveness in both the workplace and society. Narcissists perceive a sense of supremacy and authority, using harmful tactics to gain attention and dominate teams. These individuals aim to defeat others for benefits such as authority, prominence, supremacy, and

financial benefits. They use unethical tactics and discourage others through abusive supervision to exploit their disadvantages (Jonason *et al.* 2015; Chughtai and Shah 2020).

The three categories of the triangle can be analytically distinguished from one another, but they also overlap and have certain traits in common, like a propensity for manipulation and exploitation, and a lack of empathy (Brewera *et al.* 2018). Furthermore, studies have shown that these characteristics are positively connected with one another (Jonason *et al.* 2011; Robbins and Judge 2017), even though they do not always occur together. Consequently, rather than being a distinct phenomenon unto itself, the phrase "dark triangle" is better understood as a shorthand for a group of related personality traits (Rauthmann 2012; AL-Abrrow and Thajil 2020).

It is well acknowledged, according to Hogan and Hogan (2001), that individuals who possess the dark triad features are more prone to behave in ways that are not appropriate in their professional lives. They are also more likely to do so during times of unrest or when social cohesion is lacking. While dark triad characteristics are typically seen negatively, research also indicates that they may have advantages, such as assisting someone in establishing a prosperous profession (Wisse *et al.* 2015). As such, the dark triad's bad elements shouldn't be the only criteria used to evaluate it. Dark triads features are often associated with leadership qualities and well recognized indicators of professional success, like a rapid promotion and a high level of job satisfaction (Aljuwaiber and Elnagar 2022; Volmer *et al.* 2016). They have also been connected to creative behaviour, including generating, promoting, and carrying out original ideas (Wisse *et al.* 2015; Abrrow and Thajil 2020).

Although pathological qualities have been researched by psychologists for over a century, the idea of DTPTs is relatively new. The notion of dark triad, which was first presented by Robert and Hogan in 2001 and subsequently made popular by Paulhus, lies in the conceptual area between typical personality traits and serious mental illnesses (Paulhus and Williams 2002). They are often described as subclinical because, although many of them show patterns like those of personality disorders, those who score highly on these traits neither display abnormally high nor consistently high levels of these traits across time. That is, having a gloomy personality does not necessarily make it harder for a person to go about their daily life normally. Instead, these characteristics are more likely to emerge when the person is unable or refuses to recognize the need to self-regulate their darker tendencies. Such circumstances can arise when a person is really stressed out, has a lot on their plate, is preoccupied, or has enough status and authority that they believe there are less societal repercussions for misbehaving (Harms and Sherman 2021).

In contrast to pathological diseases, Hogan *et al.* (2021) showed that dark triads can be understood as coping mechanisms or means of achieving individual goals. In other words, Harms (2022) indicated that it can have beneficial effects and fulfil a psychological or social role in some situations, but when utilized excessively, they can also have negative effects or cause issues in relationships. Therefore, it is possible to argue that outcomes that are unfavourable or suboptimal may be linked to both extremely high and very low levels of dark triads. A person may be disregarded or overlooked if they choose not to use any of these coping mechanisms and using them heavily or repeatedly may harm links and reputations (Hogan *et al.* 2021). Even though the type of the profession may frequently influence the relationship (Jonason *et al.* 2014). It should be noted that some dark triangles are riskier than others. For example, overly high levels of perfectionism or an overpowering urge to please others can be socially awkward and damaging to professional performance, especially among leaders, even when these behaviours are intended to be positive. Consequently, it should be recognized that not all dark triads are associated with deliberate harm or contempt for others, even if the most well-known examples of them are all marked by interpersonal animosity and callousness toward others (Al-Rawashdeh *et al.* 2023; Paulhus, 2014). Even while dark triads can be helpful in some situations,

According to Bergholthaus *et al.* (2023) dark triads can be advantageous in some situations; their unpleasant or unwanted qualities are what identify them most. The fact that many of these characteristics are thought to be important contributors to highly significant (and unfavourable) workplace outcomes like litigation, team conflicts, job terminations, and organizational performance failures shouldn't come as a surprise. Woo *et al.* (2016) found that there is a nexus between high DPT and greater levels of turnover, counterproductive work behaviours (Grijalva and Newman 2015), poorer job performance (Hogan *et al.* 2021), hostile cybersecurity behaviours (Harms *et al.* 2022), as well as poorer leadership behaviours (Furnham and Sherman 2021). Nevertheless, numerous research has shown that dark traits significantly increase the normal range of personality traits (O'Boyle *et al.* 2012).

1.2. Dark Traits Personality Taits and Turnover Intention

According to multiple research studies, individuals exhibit immoral behaviours, such as engaging in unethical treatment of stakeholders and coworkers, engaging in embellishment of their actions, and damaging the

reputations of their associates, all in pursuit of their desired outcomes (Greenbaum *et al.* 2017). The issue of turnover is a significant one for organizations, as it impacts not only their financial resources but also their non-financial resources. Previous study has demonstrated a positive relationship between the intention to leave and Machiavellianism (Chung, 2021). However, earlier studies have also indicated that working with individuals who possess narcissistic traits leads to employee attrition, as their objectives do not align with those of the company. Consequently, there is a heightened likelihood that employees will express the intention to leave the organization due to discrepancies in shared values between themselves and the firm (Jiang *et al.* 2019).

Research results have showed that the presence of narcissistic individuals in the workplace fosters a culture of dishonesty, which has detrimental effects on the performance of coworkers and increases the likelihood of employee turnover (Foulk *et al.* 2018). In situations where employees find themselves in unfriendly work environments, their consideration of leaving the organization may arise when their moral values are compromised. In work settings characterized by fear, trauma, and intimidation, individuals will inevitably choose to depart from the company, as their job satisfaction and engagement will suffer (Çelik, 2018). Workers who encounter narcissistic work situations are more prone to absenteeism when experiencing a breakdown. Consequently, they are more inclined to leave the organization or seek better employment opportunities, resulting in increased turnover.

Blair *et al.* (2008) found that narcissism negatively affects employee job satisfaction, with managers often manipulating and dishonest to achieve their desired status, often getting more recognition than they deserve. Narcissism is characterized by self-absorbed individuals who view victory and supremacy enthusiastically, possess resilience, and often abuse their self-esteem to gain merits from other firms (Khan *et al.* 2020). Psychopathy is a personality disorder that can lead to antisocial and bullying behaviour, affecting individuals' health and workplace outcomes (Khan *et al.* 2021). It is thought to be the most hazardous and damaging characteristic among DTPTs, impacting both personal and professional relationships (Williams and Paulhus, 2004).

Studies (Mathieu and Babiak 2016; Cao *et al.* 2019) showed that employees with psychopathic traits in their direct colleagues experience lower job satisfaction, work-family conflict, distress, and increased turnover. This negative association between DTPTs and adverse workplace outcomes, such as TI and cyberbullying. Baheer *et al.* (2023) found that DTPTs had a significant and positive correlation with TI.

1.3. Dark Traits Personality Taits and Organizational Citizenship Behaviour

OCB is an active and voluntary form of individual behaviour that serves to enhance teamwork and improve the effectiveness of an organization (Al-Rawashdeh *et al.* 2020a; George and Jones 2012). Furthermore, it plays a crucial role in raising productivity and fostering a positive workplace (Kinicki and Fugate 2018). However, it is important to note that the assumption that OCB is entirely voluntary may not be entirely accurate, as certain instances of OCB may arise due to coercive management techniques or external societal pressures (Al-Rawashdeh *et al.* 2020b; Pradhan *et al.* 2016). The behaviour exhibited by employees in the workplace is influenced by their surroundings and personal characteristics, which can be classified as either organizational citizenship or counterproductive work behaviours. It is possible for these behaviours to coexist within an individual (Chattopadhyay 2019). The manifestation of OCB is influenced by factors such as perceived organizational justice, commitment, job satisfaction (Singh and Singh 2018).

DTPTs represent a set of negative personality traits that exert a significant effect on both people and organizational outcomes within the workplace (Jonason *et al.* 2014). Psychopathy is characterized by immature behaviour, a lack of empathy, and self-centred and unsatisfactory interpersonal interactions (Boey and Vantilborgh 2016). People with a dark personality are not the most suitable candidates for fulfilling OCB, as various meta-analyses and literature reviews emphasize the negative relationship between DTPTs and the positive attitude and effectiveness of employees (Webster and Smith 2018). Although a few empirical studies have demonstrated a link between DTPTs and positive workplace behaviours, such as OCB, these studies have generally found a negative correlation (Schütte *et al.* 2018).

However, Webster and Smith (2018) discovered no connection between DTPTs and OCB. Conversely, OCB is a prosocial activity in which an individual puts the needs of others before their own (LePine *et al.* 2002). People with high DTPTs have been found to be less likely to participate in OCB. Paulhus and Williams (2002) found that individuals with a strong desire for personal sovereignty but who are narcissistic or psychopathic are less likely to participate in optional facilitating behaviours (OCB). Furthermore, Machiavellians are less likely to participate in OCB and tend to put their own needs ahead of those of others (Jones and Paulhus 2011). But in two circumstances, people with high levels of Machiavellianism may show higher levels of OCB: when they

believe their leader is transformative, and when a positive transactional psychological contract is in place (Zagenczyk *et al.* 2014; Belschak *et al.* 2015). Furthermore, other dimensions of dark personalities, such as psychopathy and narcissism, have been found to be linked with lower levels of OCB compared to individuals low in these traits (Smith *et al.* 2016). Chughtai and Shah (2020) elucidated that individuals who possess DTPTs exhibit uncivil conduct within the workplace towards their superiors, colleagues, and subordinates when they perceive a threat to their self-esteem originating from the organizational context. Consequently, this leads to a decrease in favourable consequences, OCB.

1.4. Dark Traits Personality Taits and Job Burnout

Research on dark personality focuses on the Dark Triad, consisting of and Machiavellianism, psychopathy, and narcissism (Paulhus and Williams 2002). Machiavellianism involves cynical beliefs, emotional detachment, and manipulation, while narcissism focuses on control and admiration. Psychopathy lacks concern for others and social regulation, impulsivity, and guilt (Prusik and Szulawski 2019). While often treated as singular traits, these constructs are multidimensional and relatively independent (Cohen 2016). JB is a chronic stress disorder that affects people in a variety of professions, such as managers, salespeople, IT specialists, and military personnel. It is initially associated with human services (Demerouti *et al.* 2001; Prusik and Szulawski 2019).

In our study, we defined JB as a confluence of disengagement from work and tiredness, marked by severe physical, affective, and cognitive strain as well as unfavourable attitudes about tasks, work-related environments, employee values, and company culture.

Previous studies (Johnson *et al.* 2015; Prusik and Szulawski 2019) examined the relationship between DTPTs and JB. A positive correlation between Machiavellianism and JB may be anticipated given its associations with low job satisfaction (Jonason *et al.* 2015), high job stress (Richardson and Boag 2016), as well as its negative associations with task-oriented coping strategies. As for the nexus between psychopathy and JB, it is less clear. Psychopathy and occupational stress are not significantly correlated (Richardson and Boag 2016). Nonetheless, a recent study (Johnson *et al.* 2015) provides evidence in favour of the hypothesis that psychopathy is linked to elevated levels of occupational stress, emotional tiredness, and adverse affective experiences. Prusik and Szulawski (2019) found that JB is predicted by a high degree of narcissism. Following the debate of theoretical conceptualization, we proposed and produced the following hypothesis:

H1 DTPTs are positively correlating with the TI in Jordan Hotels
H2 DTPTs are negatively correlating with the OCB in Jordan hotels.
H3 DTPTs are positively correlating with the JB in Jordan hotels.
H4 DTPTs are positively affecting the TI in Jordan hotels.
H5 DTPTs are negatively affecting the OCB in Jordan hotels.
H6 DTPTs are positively affecting the JB in Jordan hotels.

Figure 1. Theoretical framework and research hypotheses
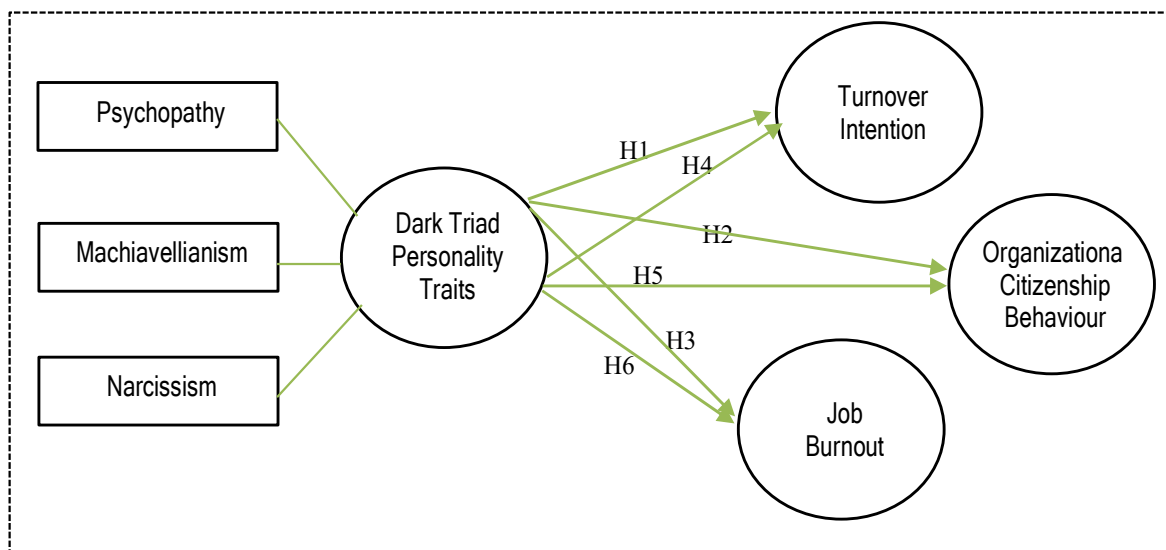
Source: (Authors based on previous studies)

2. Methods

On a non-experimental research model, this study is built. WO (TI, OCB, and JB) was the dependent variable while DTPTs was the independent variable under analysis. This kind of design is appropriate for examining the current research aims since it tracks the relationships between variables and how they affect one another in terms of intensity or buffer level. A cross-sectional study strategy examines variables at a single point in time without adjusting or modifying the independent variable (Busuioc and Butucescu 2020).

2.1. Procedure and Participants

The purpose of the research is to investigate the linking of DTPTs with WO (TI, OCB, and JB). The following factors led to the data being gathered from Jordanian hotel industry employees: First, the hospitality industry plays a critical part in Jordan's economic development. Second, compared to the work environment in Jordan, the employees' nationalities and varied organizational principles, tactics, and practices meant that workers in this industry had to deal with a new set of issues (Jawabreh *et al.* 2022; Rawashdeh *et al.* 2021).

We chose a sample size of 560 (*i.e.*, 56 × 10) using the sample-to-item ratio theory and the criterion of 10 replies against each question (Baheer *et al.* 2023; Ben Ltaifa *et al.* 2024). Thus, a total of 560 answers were obtained from various hotel staff positions throughout 20 four- and five-star hotels in Jordan. With 405 surveys being reverted, 72.32% of the total were answered. Because some employees were unable to provide the necessary answers, 18 were left blank. They were therefore useless for exploration. According to the study, which used the remaining 387, the response rate was 69.11%.

There were two sections in the questionnaire. The first includes population-level demographic data to learn about the gender, age, position, experience, and other details of the employees. In the second, there were inquiries on the research variables (DTPTs and WO). SPSS was used to do the respondents' demographic analysis.

As a result, almost 73.2% of respondents were men and 26.8% were women. Of those surveyed, 81.4% were married. Less than 35-year-old employees made up the largest percentage of responses (44.2%), suggesting that young people work in hotels for the most part. 67.4% of the respondents, or 267 out of the 387 total sample, held a bachelor's degree. Similarly, only 6 participants out of 387 had a PhD degree (1.5%), whereas 57 respondents had merely a diploma (14.4%), 41 respondents had a master's degree (10.4%), and so on. Of the responders, 177 (44.7%) had experience ranging from 0 to 5 years. Comparably, 101 respondents (25.5%) reported having five to ten years of experience, 54 (13.6%) reported having eleven to fifteen years of experience, and 55 (13.9%) reported having more than fifteen years of experience. This helps to ensure that the answers are accurate. The types of employees in Jordan hotels were identified by their demographics.

2.2. Instruments

To measure DTPTs, we employed the Jones and Paulhus (2014) scale, which contains the 27-item short dark triad. The three DTPTs were examined using 9 questions each: Machiavellianism (I like to use clever manipulation to get my way; It's not wise to tell your secrets), subclinical psychopathy (People who mess with me always regret it), subclinical narcissism (I hate being the centre of attention; People see me as a natural leader). Participants were asked to rate how much they agreed on each item using a 5-point rating scale with anchors ranging from 1-Strongly Disagree to 5-Strongly Agree. For DTPTs, the range of Cronbach's alphas (α) was 0.808 to 0.815, while the range of validity was 0.898 to 0.903.

Mobley *et al.* (1978) developed 6 items to measure TI, such as I think a lot about leaving the organization. Every item was given an anchor on a 5-point Likert scale, ranging from 1-Strongly Disagree to 5-Strongly Agree. A total score was generated by averaging the item scores. For TI, the validity was 0.911 and the α was 0.830. To evaluate OCB, a Williams and Anderson (1991) scale was employed, and it was measured using fourteen items (I go out of my way to help new employees). A 5-point grading system was used for each item, including anchors that ranged from 1 (not at all characteristic of me) to 5 (extremely characteristic of me). The total OCB score was calculated by averaging the scores on 14 items. For OCB, validity was 0.918 and α was 0.843. Schaufeli *et al.* (1996) created nine items to measure JB. Some examples of such statements are: Working all day really strains me and I feel emotionally drained from my work. Participants were asked to rate how much they agreed on a 5-point Likert scale, where 1 meant "never" and 5 meant "daily". For JB, the validity was 0.926 and the α was 0.857. The study yielded a validity coefficient of 0.927 and an overall scale α of 0.861. The reliability and validity of the scale were evaluated using Cronbach's alpha, with values < 0.7 deemed acceptable for reliability and ≤ 0.6

for validity (Sekaran and Bougie, 2013). Because they are greater than this percentage, all of the coefficients related to the validity and reliability of the scale are therefore considered favourable.

3. Results

3.1. Hypotheses Testing

Prior to looking at research hypotheses, all mean, standard deviations, skewness, kurtosis, and correlation were calculated. The DTPT aspects (psychopathy, Machiavellianism, and narcissism) have mean values ranging from 2.69 to 3.21, as shown in Table 1. This indicates that employees attest to the fact that DTPTs are among the elements that adversely impact WO (overall µ= 2.97). Regarding WO from DTPTs, Machiavellianism (µ=3.21) was the most significant factor. The range of all variable standard deviation values is 0.714 to 1.06. This shows that the data are distributed normally and that they slightly depart from the mean rather than focusing too much on it. All the variables' skewness values, which ranged from 0.354 to 0.609, are positive and almost zero. Thus, the data follow the normal distribution. Additionally, the kurtosis values for each variable ranged from 0.105 to 0.785 and are all positive and around zero.

Table 1. The Descriptive analysis for DTPTs

Variables	Dimensions	Items	Mean	Std. Deviation	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Dark triad personality traits (DTPTs)			2.97	.945	.551	.124	.318	.247
	psychopathy	9	2.69	1.06	.609	.124	.105	.247
	Machiavellianism	9	3.21	1.02	.354	.124	.445	.247
	narcissism	9	3.02	.714	.513	.124	.785	.247

Source: authors' data analysis.

The mean values of the WO dimensions (TI, OCB, and JB) ranged from 3.41 to 3.94, as shown in Table 2. This indicates that a significant percentage of hotel staff members agreed that WO (Overall µ= 3.64). OCB (µ= 3.94) was found to be the most significant factor in WO. Every variable's standard deviation falls between 0.624 and 0.973. This shows that the data are distributed normally and that they slightly depart from the mean rather than focusing too much on it. All the variables' skewness values, which ranged from 0.203 to 0.670, are positive and almost zero. The data therefore exhibit a normal distribution. Additionally, the kurtosis values for each variable ranged from 0.215 to 0.742 and are all positive and around zero.

Table 2. The Descriptive analysis for workplace outcomes

Variables	Dimensions	Items	Mean	Std. Deviation	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Workplace outcomes (WO)			3.64	.973	.477	.124	.215	.247
	Turnover intention (TI)	6	3.56	.870	.670	.124	.742	.247
	Organizational citizenship behavior (OCB)	14	3.94	.786	.203	.124	.313	.247
	Job Burnout (JB)	9	3.41	.624	.334	.124	.395	.247

Source: authors' data analysis.

By calculating the correlation between DTPTs (psychopathy, Machiavellianism, and narcissism) and (TI, OCB, and JB), the Pearson correlation coefficient "r," which is a metric for assessing the strength of the linear link between two variables, was utilized to evaluate the assumptions. According to the "r" values (r> 0, P<0.01), the results support a significant and positive connection between DTPTs and TI and JB. It's important to remember that this correlation's strength and significance differed depending on the dimension. The hypothesis H1 is validated by Table 3, which shows a significant and robust positive association (P<0.01, correlation rate of 52.7%) between DTPTs (psychopathy, Machiavellianism, and narcissism) and TI. In contrast, there is no correlation between DTPTs (psychopathy, Machiavellianism, and narcissism), and OCB, thereby not confirming validation of the hypothesis H2.

Table 3. The correlation among research variables

	1	2	3	4	5	6	7
1. Dark triad personality traits							
2. Psychopathy	892**						
3. Machiavellianism	792**	776**					
4. Narcissism	625**	655**	713**				
5. Turnover intention	527**	318**	721**	556**			
6. Organizational citizenship behavior	072	031	001	121	547**		
7. Job Burnout	542**	472**	569**	511**	629**	560**	

Source: authors' data analysis.

Table 3 further shows that DTPTs (psychopathy, Machiavellianism, and narcissism) and JB have a positive connection (P<0.01), correlation rate of 54.2%, supporting the validity of hypothesis H3.

Table 4. Regression of DTPTs and TI

Turnover intention (TI)					
	Unstandardized Coefficients		Unstandardized Coefficients	t	Sig.
	B	Std. Error			
(constant)	3.41	.107		32.06	.000
Psychopathy	.466	.198	.507	2.36	.019
Machiavellianism	.318	.147	.388	2.15	.031
Narcissism	.721	.320	.772	2.26	.025
F= 2.54	Sig.= .000	R= .140	R^2= .019		

Source: authors' data analysis.

As can be seen in Table 4 the model's significance (P<0.001 and R model of 14%) was confirmed at the significance level, and the F value is 2.54. The dimensions of DTPT are advantageous to TI. This dimension is thought to be the most effective DTPT dimension on TI. Narcissism has a positive impact on TI (β =.721, T= 2.26, P< 0.05). Psychopathy has a positive impact on TI (β =.466, T= 2.36, P< 0.05). This dimension is thought to be the second effective DTPT dimension on TI. In conclusion, Machiavellianism positively affects TI (β =.318, T= 2.15, P< 0.05). This dimension is considered the third effective DTPT dimension on TI. Consequently, it is acknowledged that the H4. DTPTs are positively influencing the TI in Jordan hotels.

Table 5. Regression of DTPTs and OCB

Organizational citizenship behavior (OCB)					
	Unstandardized Coefficients		Unstandardized Coefficients	t	Sig.
	B	Std. Error			
(constant)	3.39	.097		35.04	.142
Psychopathy	.319	.179	.384	1.78	.076
Machiavellianism	.229	.133	.310	1.72	.087
Narcissism	.541	.291	.641	1.86	.064
F= 1.20	Sig.= .142	R= .097	R^2= .002		

Source: authors' data analysis.

Table 5 reveals that DTPTs (psychopathy, Machiavellianism, and narcissism) do not influence OCB. As a result, the H5. DTPTs are negatively influencing the OCB in Jordan hotels, which is not accepted.

Table 6. Regression of DTPTs and JB.

	Job Burnout (JB)				
	Unstandardized Coefficients		Unstandardized Coefficients	t	Sig.
	B	Std. Error			
(constant)	1.91	.143		13.36	.000
Psychopathy	.342	.090	.411	3.81	.000
Machiavellianism	.419	.065	.567	6.44	.000
Narcissism	.339	.077	.414	4.42	.000
F= 41.08	Sig.= .000		R= .548	R²= .301	

Source: authors' data analysis.

Table 6 shows that the model's significance (P<0.001 and R model of 54.8%) was validated, with a F value of 41.08. The dimensions of DTPT are advantageous to JB. Machiavellianism has a positive impact on JB (β =.419, T = 6.44, Sig. P<0.001). This dimension is considered the most effective DTPT dimension on JB. Psychopathy has a positive impact on JB (β =.342, T = 3.81, Sig. P<0.001). This dimension is considered the second effective DTPT dimension on JB. In conclusion, JB is positively impacted by narcissism (β =.339, T = 4.42, Sig. P< 0.001). This dimension is the third effective DTPT dimension on JB. Consequently, it can be said that the H6. DTPTs are having a beneficial impact on JB in Jordanian hotels. The findings of the hypothesis testing are collected in (Table 7).

Table 7. Hypotheses testing results.

Hypothesis	Path		B	P-value	Supported?
H1	DTPTs ⟶	TI	.527	<0.01	Yes
H2	DTPTs ⟶	OCB			No
H3	DTPTs ⟶	JB	.542	<0.01	Yes
H4	DTPTs ⟶	TI	.140	<0.001	Yes
H5	DTPTs ⟶	OCB			No
H6	DTPTs ⟶	JB	.548	<0.001	Yes

Source: authors' data analysis.

4. Discussion

The study set out to determine the incremental validity of DTPTs in predicting workplace outcomes (TI, OCB, and JB) in Jordan hotels. Our findings revealed that DTPTs (psychopathy, Machiavellianism, and narcissism) are positively correlated with TI. This compares favourably with findings published by Mathieu and Babiak (2016), Foulk *et al.* (2018), Cao *et al.* (2019), and Baheer *et al.* (2023), but not with Szabo *et al.* (2021), who affirm that it is noteworthy that the study did not identify any unique variance in OCB or TI when taking the HEXACO model of personality into consideration. Chung (2021) showed a positive correlation between the intention to leave and Machiavellianism, but also suggested that narcissistic traits can increase employee attrition. In the workplace, narcissistic people foster an environment of dishonesty that increases employee turnover and affects coworker performance (Foulk *et al.* 2018). Unfriendly work environments, characterized by fear, trauma, and intimidation, can lead to compromised moral values, job satisfaction, and increased absenteeism. This can result in employees seeking better opportunities and increased turnover (Çelik, 2018).

As opposed to this, DTPTs did not show any correlation with OCB, which is in line with (Schütte *et al.* 2018; Szabo *et al.* 2021). Jones and Paulhus (2009) found that Machiavellians put their own needs first and are less prone to participate in OCB. However, they may exhibit higher levels of OCB when their leader is transformative and there's a favourable transactional psychological contract. Other DTPTs, like narcissism and psychopathy, have lower levels of OCB (Belschak *et al.* 2015).

Another important finding in our research is that DTPTs (psychopathy, Machiavellianism, and narcissism) have shown a correlation with high levels of JB. Our research has revealed that individuals high in these traits might exhibit an increased susceptibility to job Burnout. This unexpected finding suggests that certain characteristics associated with the DTPTs, such as high self-confidence, emotional resilience, and a capacity for

detachment, could potentially lead to the development of Burnout in work settings. So, it's crucial to approach these findings with caution. This result agrees with (Johnson *et al.* 2015; Prusik and Szulawski 2019), which suggested a positive correlation between Machiavellianism and JB with high job stress and low job satisfaction. However, the relationship between psychopathy and JB is less clear, with psychopathy linked to occupational stress, emotional tiredness, and adverse affective experiences. Başar (2020) found significant relationships between DTPTs and JB in various combinations. The positive relationships between narcissistic and psychopathic behaviours and employee exhaustion may improve, according to Volmer *et al.* (2016). This study collected data from line managers and subordinates, analysing it at multiple levels using hierarchical linear modelling. The findings may improve Gkorezis *et al.* (2015) research by investigating all factors in DTPTs and JB.

Moreover, the results revealed that DTPTs (psychopathy, Machiavellianism, and narcissism) positively affect TI. This result is agreed with Szabo *et al.* (2021). According to Baheer *et al.* (2023), employees with higher levels of DTPTs are more likely to have a higher TI. Organizations should be aware of the influence of DTPTs on TI and take action to address and reduce the harmful impacts of DTPTs in the workplace.

Furthermore, results verified that DTPTs have no effect on OCB. This result was consistent with that of Szabo *et al.* (2021): the HEXACO model of personality, which incorporates honesty and humility as a broad personality trait, is more effective in explaining personality-level differences related to OCB than the DTPTs in predicting OCB. On the other hand, the majority of research (Belschak *et al.* 2015; Webster and Smith, 2018; Chughtai and Shah, 2020; Baheer *et al.* 2023) has discovered that DTPTs have a negative effect on OCB, meaning that people who exhibit high levels of these traits are less likely to participate in OCBs. They demonstrated that workers with greater degrees of these characteristics typically don't take part in extracurricular activities like helping coworkers or actively supporting initiatives to improve guest experiences. Moreover, the presence of DTPTs often disrupts team dynamics, fosters a lack of commitment to organizational goals, and raises ethical concerns, collectively impacting the willingness and ability of employees to demonstrate OCB within hotels. Addressing these traits becomes crucial in fostering a workplace culture conducive to OCB and overall organizational success.

Finally, the results illustrated that DTPTs influence significantly and positively. We found that DTPTs with self-centeredness, manipulative tendencies, and lack of empathy significantly increase Burnout levels. These traits lead to strained relationships, workplace conflict, and disregard for others' well-being. Pursuing personal gain without ethical considerations increases stress and JB. This result is in line with (Johnson *et al.* 2015; Prusik and Szulawski, 2019; Başar, 2020).

This study investigated important findings and made theoretical and practical contributions to the understanding of the utility of DTPTs (psychopathy, Machiavellianism, and narcissism) in predicting workplace outcomes (TI, OCB, and JB) in Jordan hotels. Accordingly, the study recommends that to reduce the presence of DTPTs in hotel settings, proactive measures focused on selection, training, and organizational culture are essential. Implementing thorough hiring processes to assess candidates' personality traits can help identify potential red flags associated with the Dark Triad. Investing in training programs that emphasize empathy, ethical conduct, and teamwork can foster a positive work culture and discourage behaviours aligned with these traits. Establishing clear organizational values that prioritize collaboration, integrity, and a collective focus on guest satisfaction serves as a guiding framework to deter and address the manifestation of DTPTs. By creating an environment that values and nurtures positive interpersonal dynamics, hotels can significantly reduce the likelihood of these traits manifesting among their employees, reduce TI, and JB, improve OCB.Top of Form

Conclusions and Further Research

The purpose of this study is to look at how DTPTs affect workplace outcomes, specifically turnover intention, organizational citizenship behaviour, and job Burnout. The impact of psychopathy, Machiavellianism, and narcissism as crucial factors affecting these outcomes (TI and JB) is emphasized except for OCB, which doesn't relate to these traits. Hotels should be aware of the potential negative effects of these traits and take steps to mitigate them. This can include carefully screening job applicants for these traits during the hiring process, providing training and support to help employees develop emotional intelligence and improve their interpersonal skills, and fostering a positive workplace culture. The study has several limitations that should be considered when interpreting the results. First, the sample size was relatively small, and the study was conducted in a single country, which limits the generalizability of the findings. Future research should include larger and more diverse samples and should be conducted in multiple countries to increase the generalizability of the results. Second, the study relied on self-report measures, which may be subject to bias. Future research should include objective measures of TI, OCB, and JB, such as actual turnover rates and supervisor ratings of employee behaviour.

Finally, the study did not include other potential predictors of TI, OCB, and JB, such as job satisfaction and organizational commitment. Future research should include these variables to provide a more comprehensive understanding of the factors that influence TI, OCB, and JB in the hospitality industry. Despite these limitations, the present study provides valuable insights into the relationship between DTPTs and TI, OCBC, and JB in the hospitality industry. The findings of this study can help organizations understand the potential negative effects of these traits and develop strategies to mitigate them.

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Credit Authorship Contribution Statement

The authors made equal contributions to this work.

Declaration of Competing Interest

The authors state that they do not have any financial conflicts or personal connections that could seem to have impacted the research reported in this document.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Assessing City Marketing in Jordan: The Case of Petra

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Abstract: The aim of this study is to assess city marketing approaches used in promoting Petra in Jordan. To this end, four major criteria, including integrated marketing communication, quality of urban services, organizational procedures, and tourism receipt, were considered in this study. A qualitative method using in-depth, face-to-face interviews with top managers, was used to achieve the study objectives. Findings reveal that Petra suffers from a lack of effective city marketing strategies. The processes of city marketing, including integrated marketing communication, urban services, organizational aspects, and financial reserves, are greatly ineffective. Such processes are basically influenced by regulations, funding, and collaboration between various public authorities, as well as between the public sector and the private sector. The study provides useful insights for policymakers in order to improve city marketing in Jordan.

Keywords: city marketing; tourism receipt; integrated marketing communication; urban services; Petra; Jordan.

JEL Classification: R58; M31; Z32; R11.

Introduction

The use of city marketing to generate revenues is not a new phenomenon and it was extended to improve cities image and competitive positions (McCann 2020; Misic and Podnar 2019; Chigora and Hoque 2018; Al-Weshah 2018; Akroush *et al.* 2016; Luo *et al.* 2013; Balencourt and Zafra 2012; Niedomysl and Jonasson 2012; Alnsour

2011; Akroush 2011; Cozmiuc 2011; Akroush and Al-Dmour 2006; Kavaratzis 2004; Chambwe *et al.* 2023). Many governments in both developed and developing countries have been practicing such marketing techniques to improve their economic situation. City marketing has several social-economic benefits, such as increasing tourism receipts, creating job opportunities, improving investment, and increasing the contribution of tourism to the national income. Kotler *et al.* (1999) argued that many cities are increasingly tending to depend on marketing approaches to intensify investment and tourism revenues. Also, McCann (2020) argued that not all governments can generate or maintain the same level of increased receipts from tourism marketing. Therefore, the success of marketing approaches depends basically on the collective understanding of many issues, such as destination marketing, effective coordination of marketing activities, efficient implementation of the marketing process, understanding of tourism development, local community participation, understanding of inter-urban competition, and monitoring and evaluating marketing activities (Kavaratzis and Ashworth 2008; Ahmad *et al.* 2022).

A significant feature of city marketing is the development of innovative landmarks or 'flagship' buildings and structures (Kotler *et al.* 1999). City marketing includes changing external perceptions to encourage tourism, attract inward migration of residents, or enable business relocation (Czapliński and Kavetskyy 2021). Thus, American Marketing Association has defined city marketing as "the coordinated use of marketing tools, supported by a shared customer-oriented philosophy, to create, communicate, deliver, and exchange urban offerings that have value for the city's customers and the city's community at large" (Braun 2008, 43).

The study on assessing city marketing in Jordan, with a focus on Petra, presents a crucial examination of how innovative marketing strategies can bolster tourism and enhance a city's global standing, drawing on extensive literature that highlights the multifaceted benefits of effective city marketing. City marketing, as delineated by Kotler *et al.* (1999) and supported by a wide range of scholars (McCann 2020; Misic and Podnar 2019; Al-Weshah 2018; Akroush *et al.* 2016), plays a pivotal role in generating revenue, improving a city's image, and securing a competitive position on the global stage. This is increasingly relevant for both developed and developing nations that seek to leverage their unique attractions to boost economic growth and societal well-being.

The importance of this study lies in its comprehensive approach to understanding the complixity of city marketing, which encompasses not just the promotion of a city's image but also the development of infrastructure, enhancement of services, and engagement in IMC strategies. These elements are critical in attracting tourists, investors, and new residents, which in turn contribute to a city's economic development and cultural vitality. The American Marketing Association's definition of city marketing emphasizes a coordinated effort that benefits both the city and its stakeholders (Braun 2008), highlighting the importance of a customer-oriented philosophy.

Moreover, the study addresses the need for a nuanced understanding of the factors influencing city marketing's success, including destination marketing, the effectiveness of promotional activities, local community participation, and the application of urban policies (Kavaratzis and Ashworth 2008). The case of Petra is particularly significant, given its status as a world heritage site and one of the New Seven Wonders of the World, coupled with its potential to generate substantial tourism revenue for Jordan. This research thus not only aims to assess current marketing strategies but also to identify ways to enhance Petra's appeal and competitive edge in a crowded global tourism market.

By examining Petra's case within the broader context of city marketing theories and practices, this study contributes valuable insights into how cities in the Middle East, particularly those with significant historical and cultural assets, can optimize their marketing efforts. The findings have the potential to inform policy-making, guide strategic planning, and inspire innovative marketing initiatives that can elevate Petra's profile and, by extension, Jordan's tourism sector.

Kotler *et al.* (1999) distinguish between four distinct strategies for improvement, which are the foundations for building a competitive advantage, namely design (place as the character), infrastructure (place as fixed environment), basic services (place as the service provider) and attractions (place as entertainment and recreation). However, strategies such as market research and place promotion (Hankinson 2004) cannot operate effectively without being supported by effective urban policies. Hubbard and Hall (1998) have also noted that successful city marketing requires the re-imagination of localities and the transformation of previously unproductive urban centers into spectacular cities for increased consumption. They suggest five measures of the marketing mix, namely, publicity and promotion, large-scale physical development, civic and cultural facilities, mega-events, and cultural regeneration. Clark (2006) has also identified six measures of success that can be identified from the indices as important for achieving successful city marketing, namely; a good image, efficient transportation links, an attractive business climate, the presence of global players, security, safety, and transparency. To build the attractiveness of a place, global recognition is one of the most important influencing

factors (Czapliński 2023). According to Kavaratzis (2004), achieving such aims requires specific instruments, for instance, advertising and promotion, large-scale physical redevelopment, public art and civic statuary, mega-events, cultural regeneration, and the public–private partnerships. To create effective marketing of tourism destinations, towns, and cities need to differentiate themselves through the provision of more unique tourism products and services (Heeley 2016). Hence, the effectiveness of city marketing is mainly influenced by how urban policies are selected and applied to the proper combination of these measures. Literature on destination marketing has investigated different methods to measure destination image from customer perspectives and the influence of image recognition on customer decision-making (Chigora and Hoque 2018; Pike and Page 2014).

Cities can be marketed like other products in order to enhance their brand image and identity by improving their competitive position in the market. Hence, it is important for any city to make some improvements in different areas, especially in the areas which are critical for successful marketing of tourism cities by improving unique identity of competitive tourism (Chambwe *et al.* 2023).

City marketing is influenced by four main areas. Firstly, integrated marketing communication (IMC) aims to promote the city to public audiences. The communication and Internet technology revolution has dramatically changed the business landscape (Al-Weshah *et al.* 2013). There is a piece of clear evidence in the literature that image formulation and communication play a critical role in city marketing. In some cases, the importance of image is expressed as a sole focus in the customer relationship and promotion process (Al-Weshah 2023). Tourism choices to visit attraction locations affect tourism marketing strategy. Accordingly, if it is not equipped with inadequate promotions and there are no attractions at the destination, tourists will not visit a particular location, tourist attraction, and other events in any destination area (Sudarmayasa 2022). Gale and Donaire (2005) determined that image is a collection of messages which are created consciously or unconsciously. On the other hand, perceived images are created in the mind of an individual and are, thus, an interaction between projected messages and specific consumer needs, motivations, prior knowledge, experience, preferences, and other personal characteristics. Word-of-Mouth (WOM) is another important element in the IMCs process. Advertising by either WOM or printed materials should be developed in a way that promotes customer awareness and minimizes negative feedback, which can significantly affect customer retention and acquisition percentages (Maaiah and Masadeh, 2015) positively. Gale and Donaire (2005) indicated that positive WOM could create a favorable image and can eventually reduce promotional expenditure. Printed materials are important as marketing tools for tourism practices and activities to reduce risk and contribute to understanding customer needs (Al-Weshah 2018; Maaiah and Masadeh 2015). Promotion from social media is influenced by honesty of the news that is conveyed. displayed, sustainable, and a well-known brand that can attract potential customers (Sudarmayasa 2022). It has been accepted that IMC can generate better income for cities due to the expansion of promotional activities.

The second factor is urban services. Rana *et al.* (2018) argued that the widespread use of information technologies can enable cities to enhance service delivery. According to Alnsour (2016, 2014), urban services can be classified into two main areas, including physical services and social services; physical services include water supply, sewerage system, road network, and drainage system, whereas social services comprise road maintenance, waste collection, health amenities, education services, transportation, fire protection, safety and security, public parks, green spaces, leisure areas, libraries, worship centers, lighting, shopping areas, and tourist facilities (hotels and apartments). Both physical and social services represent the fundamental base of city marketing. Therefore, urban services can be considered a basic instrument for coordinating tourist development by avoiding environmental problems and simultaneously providing efficient use of tourist resources (Alnsour, *et al.* 2023). The distance of travel and different road conditions affect the decision of tourists to visit any destination area (Sudarmayasa 2022). On the other hand, the term 'services' is directly linked to the concept of 'quality of services,' where improvement of quality leads to promote and to enhance tourism development (Alnsour and Meaton 2015; Kakeesh and Ahmad 2020). As a result, increased profits from effective city marketing will result only from the provision of good quality services.

The third factor is the organizational aspect of city marketing. Short and Kim (1999) considered the political economy to be an essential organizational tool for city marketing. The city authorities' play proactive roles in policy development in city marketing, by combining horizontal networks of local communities, non-governmental organizations, and other entities in tourism cities (Broadhead 2020). According to Warnaby *et al.* (2005), the partnership between the public sector and the private sector is the most important organizational tool by which entrepreneurial activities related to city marketing are organized and carried out. It is important to recognize how people experience some aspects in regarding to space and place, thus, it is essential to consider the different groups of customers of a place (Czapliński 2023). The Jordanian government formulates many strategies and plans to improve tourism services and to attract international attention of tourists (Alhammad *et al.*

2021). This requires an organizational capacity which can be described as the ability of the public sector and the private sector to develop a new vision and to carry out a policy drawn to achieve sustainable development (van den Berg and Braun 1999). Hence, vision, objectives, and policy should be taken place relying upon the shared understanding between the public sector and the private sector.

The final factor is concerned with economic measures which express the financial returns of city marketing against marketing costs. Alhammad *et al.* (2021) stated that most of developing countries such as Jordan depends upon the economic returns of tourism. They stated that the contribution of tourism industry to the Jordanian GDP was 15.8% Goovaerts *et al.* (2014) suggested that Return on Investment (i.e., gain from the investment – the cost of investment/cost of investment) is the most suitable formula for city marketing. Profits typically result from several investments (Goovaerts *et al.* 2014). Improving IMC, services, and the organizational aspects of city marketing can result in substantially increased investment in the city (Shatnawi *et al.* 2020). Such investments can then yield more profit and income-generating activities over time (Al-Weshah 2017).

Assessing city marketing, based on the above criteria, of the ancient city of Petra in Jordan is the basic objective of this paper. The ancient city of Petra is located in the southern region of Jordan (see Fig. 1). It is the most important historical site in Jordan and was listed as a world heritage site by UNESCO in 1985. It was selected by popular vote in 2007 as one of the New Seven Wonders of the World. In 2020, the number of Petra visitors was estimated at 470742 for the period from January to September 2022 (Ministry of Tourism and Antiquities, 2023). According to the World Bank (2021), the income receipts from tourism in the Middle East and South African countries are estimated at $84,45 billion in 2021. In 2021 the income receipts in Jordan from tourism were estimated at $6,3 billion, Egypt's $32 billion, Israel's $14,78 billion, and Lebanon's $7.68 billion (World Bank, 2021). It can be seen clearly that Jordan gains lower receipts from the tourism sector compared to the surrounding countries. Therefore, the assessment of city marketing approaches for Petra is an urgent need to enhance policies and strategies which deal with city marketing and support the decision-making process. Moreover, this research can enrich existing knowledge of comparative purposes among countries in the Middle East region based on empirical findings. In addition, empirical research on city marketing is relatively rare. Hence, analyzing case studies from the Middle Eastern environment is important for expanding both urban and marketing research.

1. Research Methodology

Methodology refers to the procedural framework within which the study is conducted. A qualitative method was used to meet the study objectives, including the use of in-depth, face-to-face interviews with top managers in the marketing and urban management sector. The major principle of the qualitative method is assessing various interpretations and meanings which top managers give to city marketing. Managers' thinking and interpretations of city marketing are key axes in the assessment process accurately (Al-Weshah 2019). These interviews aimed at identifying several dimensions, including respondents' understanding of city marketing, IMC, services, a partnership between the private sector and the public sector, financial performance, planning process for city marketing, activities that have been carried out so far to market Petra and a general evaluation of city marketing. The interviews were implemented in the respondents' workplace offices. The target was to conduct 45 interviews; however, several of the selected interviewees refused to take part in the study, with only 33 interviews conducted. Table 1 illustrates the breakdown of these interviews.

Table 1. Breakdown of interviews

Organizations targeted	Number of interviews
Petra Development and Tourism Region Authority	9
The Ministry of Tourism and Antiquities	8
The Ministry of Planning and International Cooperation	3
The Ministry of Municipal Affairs	3
Jordan Tourism Board	6
Jordan Society of Tourism and Travel Agents	4
Total	**33**

2. Results and Discussion

This section concerns empirical findings of study variables, including IMC, services, organizational aspects, and financial return.

2.1 Integrated Marketing Communication

According to the interviewees, IMCs are responsible for the target market. Table 2 illustrates the range of IMC tools used by managers.

Table 2. The use of IMC activities

Activity	Percentage
Leaflets/ brochures	100%
Events and festivals	60%
Internet	85%
Public relations	75%
Direct marketing	80%
Trade shows and exhibitions	40%
Local/ regional press advertising	60%
Local/ regional radio advertising	20%
Local/ regional outdoor advertising	45%
Local/ regional television advertising	30%
National/ international press advertising	50%
National/ international outdoor advertising	40%
National/international TV advertising	30%

Table 2 substantiates that leaflets and brochures are the most common forms of marketing communication. The Internet, direct marketing, and public relations were also widely used. Interviewee 1 stated that "We use e-marketing tools to reach out target market." All these activities targeted tourists at both local and regional levels. Less widely used were local/regional press advertising, local/regional radio advertising, and national/international press advertising. The instruments which were used the least were local/regional radio advertising, local/regional television advertising, national/international outdoor advertising, and national/international television advertising. However, interviews revealed that promotional activities should be enhanced to raise historical awareness about Petra.

It can, therefore, be concluded that communication activities that targeted local markets were the most widely used, whilst those targeting regional and global markets were of less importance. Many of the interviewees acknowledged that the choice of communication instrument is severely constrained by financial cost and the lack of skilled human resources. Interviewee 4 stated that "The high cost of communication is one of the most important challenges to reach more markets." Findings also reveal that symbiosis exists between marketing communication activities; for example, events and festivals would be advertised simultaneously in leaflets, brochures, local media, and the Internet.

The growing use of trade shows and exhibitions confirms that marketing managers are becoming aware of the advantages of external investment. Although still only a small percentage on the scale at present and used by only 40 % of the interviewees, this instrument is likely to become more widely used in the future.

Analysis of data confirms that a comprehensive understanding of the concept of IMC is not yet completely understood by the tourism managers in the Petra Region. Interviews showed that promotional programs could be developed to satisfy different segments of audiences. Interviewee 6 stated that "We need to develop effective marketing programs to reach out to target markets." Although some IMC practices are attempted to some extent, the basic elements of city marketing (that is, IMC, services, financial aspects, and organizational aspects) have not been effectively utilized, thus contributing to low tourist receipts from Petra.

2.2 Urban Services

Respondents acknowledged that urban services are essential tools for enhancing accessibility to tourist places. They highlighted the importance of improving these services to enhance tourist receipts and attract higher rates of investment. As stated by all interviewees, excellent service is a profit strategy because it results in higher numbers of visitors, increased revenue, and a more competitive product. Interviewee 9 stated that "differentiated services can attract more visitors and create more profit in the region." Interviews also revealed that tourism services are critical for visitors, especially public services such as comfortable and timely transportation.

The Region of Petra is comprised of 1753.11 hectares and includes six local communities; Dlagha, Al-Rajev, Taybeh, Wadi Musa, Umm Sayhun, and Baida (Department of Statistics, 2022). Wadi Musa is the regional capital, where major infrastructure, including important public institutions such as banks and governmental administrative services, are found. Hence, the town of Wadi Musa also has the best tourist and administrative infrastructure. Additionally, Wadi Musa is the main transportation hub in the region, and transport services, ranging from small local buses to large JETT coaches, link the Petra Region to the other governorates of Jordan (Maaiah and Masadeh 2015).

Respondents went on to state that the low level of service is due to insufficient financial support from the government, which in turn hinders them from improving tourist services. They concluded that high-quality service delivery entails high-level investment. Interviewee 12 stated that "To develop the infrastructure, more governmental investments are needed." At present, due to political and social conditions both within Jordan and the wider Middle East region, the Jordanian government is facing hard economic conditions, which affects its ability to support the development sector to a high degree. Hence, most respondents confirm that the key component of value, which drives city marketing, is unlikely to be successful if service remains at a moderate or low quality. According to the respondents, value relates to the financial benefit received from a tourist location and is enhanced by an attractive service facility. Consequently, the current quality of service does not effectively maximize financial benefits. An example of a wasted opportunity on the part of the Petra Region is the current low level of spending in tourist shopping areas due to the limited shopping choices.

Furthermore, service provision is not regulated by a single authority, but by several organizations, with each organization having its vision and imposing specific regulations and standards rather than promoting standardization of high-quality services; due to this oversight, some services are better than others. Interviewee 8 stated that "Many authorities can contribute to developing the services standards." Deciding on and applying universal standards of service would be an important factor in improving service quality. As a side point, all respondents agreed that as well as a lack of standardization within the private sector, there are also multiple indices, rather than a single index, to monitor the quality of services provided by the public sector, which exacerbates the problem.

Unless the multiple regulations and standards which are currently used by service organizations are combined into a single, coherent system, significant improvement will not occur. Interviewee 19 stated that "There is an urgent necessity to uniform our work regulations." This fact has serious ramifications, not only for services that are already extant but also for future service management systems. 73% of interviewees stated that unification of regulations and standards would be a very difficult process due to the differentiation of the functional role for each organization; when asked if unification was achievable, only 27% gave a positive response. However, 60% of respondents responded positively to a system that controlled the decision-making process so that each organization would make decisions in line with other similar institutions, in the belief that it is more important to improve the quality of service rather than unifying regulations and standards. On the other hand, 40% of respondents believe that the decision-making process should be decentralized, with local organizations in control of all services; however, 60% believe it should be centralized, with the management process controlled by the national government.

Whether the control is centralized or decentralized, it is important to note that organizations can only be empowered to improve service quality if a complementary strategy, in tune with ever-changing tourist problems and contemporary economic contexts, also exists.

Moreover, 60% of respondents argue that, to some extent, an overlap exists in terms of both responsibilities and roles within the various organizations which provide or manage services, which limits the effectiveness of services provided by each and often relates to an oversupply of some services, and a corresponding lack of others. In contrast, 100% of the interviewees believe that building relationships between the various organizations involved in service management should take a participatory approach; all organizations should work cohesively to solve problems and obstacles facing the tourism sector to maximize the effectiveness of all services. If this suggestion is applied, then organizations will be able to develop a better understanding of their own needs and priorities, as well as those of other similar organizations, with the result that tourists will receive better services from all organizations. Interviewee 20 stated that "Many parties and units have to cooperate in developing a framework for tourism marketing."

2.3 Organizational Aspects

Findings reveal that 75% of respondents were already aware of the concept of city marketing, whilst 25% were not. However, 55% of those who were aware of the concept also noted that their knowledge and understanding of

individual elements of city marketing was weak. In this context, many interviewees admit that, in the past, they were rarely, if never, required to use marketing skills, but the importance of such skills has increased significantly in the past years to improve existing strategies used to market Petra. According to the interviewees, the concept of city marketing within urban management is ambiguous, as urban laws and regulations have not paid attention to the process of city marketing in the past. Interviewee 5 stated that "Our staff members need more training in tourism marketing skills." Decisions are often based on laws and regulations, and thus, the process of marketing Petra remains ineffective, even though some managers have begun to use marketing strategies. A recurring theme in all interviews was that insufficient marketing knowledge is also related to inappropriate or undesirable marketing activities. In this way, personal skills tend to be more important than educational levels in city marketing, which is also borne out by literature (Warnaby *et al.* 2005).

Findings reveal that there is a lack of coordination between tourism organizations and urban agencies, with several gaps in services resulting from this drawback. 68% of the interviewees declare there are no effective plans and/ or strategies between the Petra Development and Tourism Region Authority and other government agencies or NGOs regarding the marketing of Petra; 32% went on to say that a plurality of organizations concerning city marketing has usually resulted in barriers to improving city marketing. The interviewees confirmed that more support from governmental organizations is required. Interviewee 13 stated that "More governmental facilities are needed to enhance the quality of tourism management and marketing." Thus, the marketing of Petra is based on the interaction between the President of the Petra Development and Tourism Region Authority with individual organizations or agencies organizations. Such interaction can occur formally (through official channels) or informally (through the personal efforts of the President). According to many of the interviewees, even though the Petra Development and Tourism Region Authority was established in 2009, there has been no systemization of the marketing for Petra, and that effort is required at the national level from both the public sector and the private sector to rectify this. An effective urban policy that will result in increased organizing capacity can only occur if all stakeholders are taken into consideration (van den Berg and Braun 1999). Such a variety of involvement confirms the importance of consensual formulation in city marketing (*e.g.*, Fretter 1993; Kotler *et al.* 1993, 1999; Schmidt 1993).

Most of the respondents consider that there is no sustainable planning approach since marketing activities are carried out as part of individual business plans. However, 40% of respondents stated that they are collaborating with other organizations to some extent to develop marketing activities. However, they argued that the modest collaboration that barely exists is echoed in the weakness of the relationships among organizations concerned with city marketing, as well as the limited role these organizations play in marketing Petra. Interviewee 25 stated that "Long-term plans can be adapted to meet tourism goals in the target market." Hence, the basic concepts in tourism planning, including destination and site criteria, need to be more effective. Interviewees agree that the main reason for poor or even non-existent marketing planning is the lack of financial support from the public sector. Funding is a big challenge faced by all managers, with all respondents confirming that financial constraints affect their ability to effectively market their organization or Petra as a touristic destination.

2.4 Financial Returns

Even though Petra is one of the iconic tourist destinations in the world, with its inscription on the UNESCO World Heritage List, its success in the popular vote for the New World Wonder Competition, and its portrayal in numerous television and movie programs, it still suffers from relatively low tourist receipts. According to the World Travel and Tourism Council (2023), travel and tourism accounted for 14.6% of the GDP in Jordan. Within this framework, Petra's contribution to the total is estimated to be 30%, which is approximately U.S.$ 1 billion annually. Respondents consider this contribution to be quite low, with many arguing that the lack of higher returns is related to poor or misguided communication activities, managerial challenges, and quality of services within Petra itself. However, 55% of the interviewees added a further comment by claiming that despite the relative safety of Jordan as a tourist destination compared with many similar destinations in the world as a whole, civil disturbance and political upheaval in the wider MENA region have resulted in a large reduction in the number of tourists to the Middle East region generally and Jordan in particular. Interviewee 27 stated that "Political stability in Jordan is attractive for visitors from different target markets." This results in reducing the flow of visitors from 813,267 in 2008 to 430,106 in 2015, an average drop of 53% over eight years, resulting in a significant negative adjustment for tourism receipts from Petra (the Ministry of Tourism and Antiquities, 2008 and 2015). A huge part of urban destination marketing is ineffective, failing to create visitors and deliver the commercial and economic returns on which it is premised, and it cannot market what is special and different about places (Heeley 2016).

The considerations presented above pose a huge challenge to increasing tourist receipts from Petra. Hence, adopting effective techniques which would attract further investors and investment would be an effective means of combating these issues. Most of the interviewees agreed on an important issue, in that all information regarding tourist receipts should be received and monitored by a central agency, in addition to monitoring by indirect indicators (for example, political conditions in the Middle East or comparison with neighboring countries) to determine weaknesses and opportunities which exist, and then working towards improving financial performance. Interviewee 30 stated that "Tourism information for visitors must be controlled by one managerial unit." The nature of the tasks to be carried out and the skills available to perform them should be taken into consideration when designing techniques. Developing suitable means would positively impact the financial performance of the tourism sector.

The number of local employees (as opposed to guest workers) working in the tourism sector in Petra was estimated to be 1,525 in 2008 (the Ministry of Tourism and Antiquities, 2008); in 2015, this number had grown to 1,808, distributed over a variety of tourist organizations such as hotels, restaurants, car rental companies and travel agencies (the Ministry of Tourism and Antiquities, 2019). Thus, the total number had increased by only 236 over eight years. Similarly, over the same period, there were thirty-eight hotels in Petra in 2008 (the Ministry of Tourism and Antiquities, 2008) which increased by only two to become forty in 2020 (the Ministry of Tourism and Antiquities, 2020).

Many of the respondents noted that, despite the huge potential which exists in Petra regarding job creation opportunities. It is largely ignored or underutilized by the local people due to a lack of proper tourism education and training, low levels of income generated by tourism in the current political and economic environment, and the negative perceived image of tourism as a career within the wider community. Interviewee 21 stated that "specialized training and education in tourism management and marketing are needed for workers in Petra."

Conclusion and Implications

This research is important because it bridges theoretical knowledge with practical applications, offering a roadmap for cities like Petra to harness the power of marketing in achieving sustainable growth and global recognition. Through its examination of IMC, urban services, organizational aspects, and economic measures, the study provides a holistic view of the challenges and opportunities in city marketing, making a significant contribution to both urban studies and marketing literature. The findings verify that the positioning of Petra as a tourism destination has suffered from a lack of effective city marketing. The processes of city marketing, including IMC, urban services, organizational aspects, and financial return, are largely ineffective. Such processes are greatly influenced by regulations, funding, and collaboration amongst various public authorities, as well as between the public sector and the private sector. As a result, tourism decision-makers face a huge challenge to improve marketing standards. It is essential they not only explore how current policies are failing and the reasons behind low tourist receipts but also how they could add value to existing services, create more desirable attractions and services, and improve marketing strategies and procedures used to promote Petra by reforming current policies.

The major contribution of this paper is the provision of an original investigation of city marketing theory. It addresses four vital issues, (1) IMC, (2) urban services, (3) organizational aspects, (4) financial return, and how these issues can improve the knowledge and understanding of city marketing theory to create effective tourism strategies and urban policies. In addition, the current study offers a general theoretical framework for comparative research of city marketing theory. Therefore, further research should take into account comparative studies which can be conducted in different contexts in the world countries. In addition, as an interdisciplinary area, the study deals with city marketing, tourism development in cultural heritage sites, urban planning, and the economic aspect of heritage tourism. Thus, this study opens opportunities for further research in terms of the impact of urban politics on tourism development and community participation in tourism development.

Recommendations to enhance the decision-making process in city marketing can be summarized as follows:

First, city marketing is a social and economic practices. Thus, priority should be given to the activities of IMC. Improving such activities by mutual understanding, particularly at the international level, would enhance tourist receipts in Petra.

Second, Petra has a global historical identity. Increased financial support from the national government resulting in enhanced quality of service would provide various opportunities which would, in turn, stimulate further investment and augment the number of visitors and thus the total tourist receipts.

Third, tourist receipts in Petra will not increase unless substantial improvement to both infrastructure and service development is achieved, thus creating effective urban infrastructure, service planning, and strategic orientation. An important aspect is that day-to-day activities, such as maintenance, must be carried out regularly to maintain the improvement into the future.

Fourth, the differentiation of regulations and administration systems among and within organizations that provide services has led to contradictory policies. Designing, implementing, and adhering to a unified system of quality service with fixed standards would improve city marketing.

Fifth, the absence of a complementary, integral long-term management strategy has resulted in a history of lost opportunity and a failure to capitalize on the opportunities which have been presented; the result is relatively low-scale tourist receipts from the iconic World Heritage Listed site of Petra. Introducing an overarching strategy based on international standards of best practice would solve the issues caused by the multitude of public organizations and private companies which are currently involved in tourism and urban services within the Petra Region. However, designing and implementing an effective urban tourist strategy, and ensuring its implementation, will be a major challenge, particularly if the significant overlapping of urban and tourist organizations which currently exist are taken into account and legal, financial, and administrative impacts are minimized. Further research is required to identify and evaluate complementary organizations, in line with the overlapping of urban and tourist agencies which exist, as well as the political and regional challenges facing the marketing of Petra.

Sixth, one of the key challenges for decision-makers is to find an equilibrium between differences and similarities across destinations. Despite Petra's high-profile branding as both a regional and international destination, current city marketing policies need to work on a regional level to emphasize existing differences and similarities between Petra and other similar regional destinations. If countries within the region could cooperate in designing and implementing a regional strategy for destination marketing of similar attractions, all would benefit from each other and increase tourist receipts across the board. For example, Turkey, Egypt, and Lebanon, all of which have similar large-scale archaeological and historical sites to Petra, would be an ideal seed groups to begin working on a collaborative marketing strategy which would be mutually beneficial, as all have been affected by the political and social climate which exists in the Middle East. Finally, enhanced organizational aspects by building effective working relationships among and between intra-organizational Human Resources, in addition to the various urban organizations operating to develop the development of Petra as a tourist destination, would greatly improve tourism receipts in Petra.

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Credit Authorship Contribution Statement

Jamal Alnsour: developed the concept and plan for this project research, and reviewed and edited the manuscript.
Ghazi A. Al-Weshah: carried out the project administration, collected the data, carried out the analysis, wrote the manuscript.
Dana F. Kakeesh: developed the concept and plan for this project research, carried out the project administration.
Khalil Al-Hyari: collected the data, conducted a literature review, and wrote the manuscript.
Abdullah Radwan Arabeyyat: conducted a literature review and wrote the manuscript.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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A Systematic Literature Review on Slow Tourism and Its Implications to the Uttarakhand State of India

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Abstract: This paper explores how slow tourism might promote sustainability in India. Slow tourism is a sustainable travel strategy that prioritizes high-quality travel experiences above quantity and aims to protect the environment, promote local culture, and increase travelers' happiness. This study examines the main ideas, themes, and behaviors related to slow tourism through a thorough literature assessment. It assesses their applicability to India's socio-cultural and ecological contexts. It draws attention to the potential of slow tourism to promote sustainable development through strengthening local economies, protecting the environment, and cultivating an awareness of the natural and cultural history of the region. The report also evaluates the potential and challenges for slow tourism in India and makes recommendations for future study and policy formation. This study highlights slow tourism's potential to advance sustainability in India's tourist industry, using Uttarakhand as a relevant case study.

Keywords: slow tourism; sustainability; Uttarakhand; sustainable development; cultural preservation.

JEL Classification: L83; P25; Q01; O10; R11.

Introduction

India is renowned for its natural beauty, cultural heritage, and spiritual significance. A place like Uttarakhand (India), a renowned tourist hotspot, draws many people each year to admire its stunning natural scenery, partake in thrilling outdoor pursuits, and immerse themselves in its diverse cultural heritage (Ahlawat *et al.* 2019). Nevertheless, the rapid expansion of tourism in the area has generated apprehensions over its ecological and social implications. Slow tourism has recently been explored as a viable alternative to mass tourism, providing a more sustainable and better approach to travel. Slow tourism promotes a deep engagement with the local culture, a deliberate and unhurried approach to discovery, and the cultivation of meaningful relationships with the region and its inhabitants. Slow tourism can potentially reduce the adverse effects of traditional mass tourism by emphasizing authenticity, sustainability, and respect for local traditions (Titus 2015). Although slow tourism has achieved global awareness, its implementation and consequences in the context of India remain unexplored.

Thanks to its varied natural terrains, lively indigenous cultures, and holy sites, India offers a distinct environment to assess the practicality and results of adopting slow tourism techniques.

This systematic study focuses on the concept of slow tourism in India, intending to thoroughly examine its literature, practices, and consequences. The study is of utmost significance due to several critical reasons. To begin with, India's fragile natural equilibrium is at risk due to unsustainable tourism activities. This research aims to reveal the potential of slow tourism in developing ways to protect the natural resources, promote responsible behavior, and mitigate environmental damage. Furthermore, the place called "Uttarakhand" (India) accommodates a wide range of indigenous tribes with many cultural practices and expertise, which are at risk due to the impact of contemporary tourism. Slow tourism, which emphasizes cultural interchange and community engagement, can be utilized to safeguard local traditions, empower people, and foster sustainable livelihoods. Moreover, in a fiercely competitive global tourism industry, India must set itself apart by offering distinctive and unparalleled experiences. Comprehending the possibilities of slow tourism can inform methods for managing destinations, thereby enhancing the India's competitive advantage. Slow tourism, by the principles of sustainable development, aims to achieve a harmonious combination of economic sustainability, environmental conservation, and social fairness. Also, the study endeavors to bridge existing knowledge gaps, offer a comprehensive comprehension of slow tourism and furnish crucial insights for policymakers, tourism professionals, and researchers.

Research Objectives: (I) To comprehensively review the past research on slow tourism (II) To explore the implications of slow tourism to Uttarakhand State of India

1. Literature Review

Definition and Conceptualization of Slow Tourism

Slow tourism is a travel philosophy and approach emphasizing a more contemplative, immersive, and conscious travel experience (Fullagar and Erica 2012). It promotes individuals to interact with the destination at a leisurely pace, cultivating a more profound bond with the environment, local communities, and cultural heritage. Slow tourism emphasizes genuineness, durability, and the welfare of tourists and the location, to generate significant encounters and reduce the adverse effects of mass tourism. (Linda and Lee 2016) Essential principles and practices characterize slow tourism. Firstly, it emphasizes quality over quantity, encouraging travelers to savor and fully experience their journey rather than rushing from one attraction to another. It involves embracing a slower pace of travel, allowing for a more profound exploration and appreciation of the destination's natural beauty, cultural traditions, and way of life. Secondly, slow tourism promotes a sense of connection and engagement with the local community and culture (M. J. Kim, Lee, and Jung 2020). It promotes engagement with inhabitants, cultivating cultural interchange and knowledge acquisition. Travelers are advised to endorse local enterprises, craftsmen, and sustainable endeavors, bolstering the economic prosperity of the location, and strengthening indigenous populations. Thirdly, slow tourism prioritizes the conservation of the environment, minimizing ecological footprints, and promoting eco-friendly practices (Shahbaz *et al.* 2021). It includes respecting natural resources, reducing waste (J. H. Kim, King, and Kim 2021), supporting conservation efforts, and being mindful of the impact of tourism activities on the environment. Lastly, slow tourism emphasizes the well-being and personal growth of travelers. It encourages reflection, self-discovery (Đuranović *et al.* 2019), and a deeper connection with oneself and the surroundings.

1.1. Slow Tourism in Uttarakhand

This study used Uttarakhand state of India as a preferred location for exploring the significance and implications of slow tourism and as per the current scenario in Uttarakhand there is a need of some effective solution like slow tourism which will be play a vital role in cultural preservation and ecological safety balance in Uttarakhand. (Ahlawat, Sharma, and Gautam 2019) Slow tourism in Uttarakhand refers to a form of sustainable tourism that emphasizes a leisurely and mindful approach to travel, enabling visitors to connect with the local culture, environment, and communities. Uttarakhand, situated in the Indian Himalayas, is renowned for its unspoiled natural splendor, abundant cultural legacy, and profound spiritual importance. Being a renowned tourist spot, it has observed an increasing inclination towards embracing the concepts of slow tourism to encourage sustainable and conscientious tourism practices. The concept of slow tourism aligns with the broader slow movement (Ernszt and Marton 2021), which advocates for a more balanced and conscious way of living. Slow tourism in Uttarakhand encourages tourists to explore unhurried, fostering deeper connections (Meng and Choi 2016) with the destination and its people. It highlights experiences that enable tourists to fully engage with the local culture, traditions, and natural environment. Uttarakhand has a wide array of leisurely tourism experiences.

Travelers can engage in activities such as trekking in the Himalayas, exploring ancient temples and spiritual retreats, participating in local festivals and cultural events, interacting with local artisans and craftsmen, and practicing yoga and meditation (Titus 2015) in serene surroundings. These encounters allow tourists to decelerate, admire the beauty of the region, and gain a deeper comprehension of its distinctive heritage and ecological importance.

Several factors drive the rise of slow tourism in Uttarakhand. First, there is a growing awareness of the negative impacts of mass tourism (Meng and Choi 2016), including overcrowding, environmental degradation, and cultural commodification. Slow tourism offers an alternative strategy that advocates for sustainability, local economic growth, and the preservation of cultural heritage. Secondly, (Masood and Nguyen 2018) The abundance of natural and cultural elements in Uttarakhand renders it a perfect locale for slow tourism. The area showcases awe-inspiring scenery, encompassing majestic mountains with snow-covered summits, verdant woodlands, meandering rivers, and tranquil lakes. The area supports a wide variety of plant and animal species, making it an attractive destination for ecotourism and activities centered around nature. Moreover, Uttarakhand possesses a substantial cultural legacy, characterized by ancient temples, historical landmarks, and native populations, offering abundant prospects for genuine and immersive encounters. Moreover, slow tourism in Uttarakhand aligns with conscious travelers' aspirations to seek meaningful and transformative experiences (Vada, Prentice, and Hsiao 2019). It provides an opportunity for guests to retreat from the hectic metropolitan lifestyle, reestablish a connection with the natural environment, and interact with local people on a personal level. Slow tourism fosters a sense of mindfulness (Werner, Griese, and Bosse 2020), appreciation, and respect for the environment and local cultures, promoting responsible tourism practices and contributing to the well-being of visitors and host communities.

Geographical and cultural characteristics of Uttarakhand

Uttarakhand is located in northern India and known for its diverse geographical and cultural characteristics (Joveriya and Mariya 2019). These unique attributes contribute to the appeal of slow tourism in the region and warrant a detailed examination in the systematic review.

Geographical characteristics

Ahlawat, Sharma, and Gautam 2019: Uttarakhand, situated in the Indian Himalayas, showcases stunning landscapes with snow-capped peaks and picturesque hill stations, drawing nature-based and adventure tourists. Its diverse ecosystems, from alpine meadows to high-altitude lakes, offer rich ecotourism and wildlife tourism prospects due to its varied flora and fauna. The Ganges (Ganga) and Yamuna rivers, along with their tributaries, have profound cultural and spiritual importance, drawing religious and cultural visitors to its shores and pilgrimage destinations. Furthermore, the national parks in Uttarakhand, such as Jim Corbett, Nanda Devi, and Valley of Flowers, are widely recognized for their rich variety of plant and animal species (Masood and Nguyen 2018). These parks offer excellent prospects for observing animals and engaging in activities aimed at preserving the natural environment.

Cultural characteristics

Masood and Nguyen 2018: Uttarakhand boasts a rich cultural heritage steeped in ancient traditions, vibrant festivals like Kumbh Mela, folk dances, and traditional music. The area is home to several pilgrimage destinations, including Haridwar, Rishikesh, Badrinath, and Kedarnath, which are of great religious importance. These places attract devotees who are looking for spiritual experiences in peaceful natural environments. The gastronomy of the region highlights local characteristics with meals such as Kafuli and Bal Mithai, enhancing the genuine and unhurried vacation experience. Moreover, Uttarakhand's celebrated handicrafts, such as woodwork, stone carving, and traditional paintings, offer valuable glimpses into the local artisans' skills, thereby promoting local livelihoods. Gaining a comprehensive understanding of these cultural and geographical aspects is essential when considering the use of slow tourism ideas in Uttarakhand.

The tourism industry in Uttarakhand

The tourism industry in Uttarakhand has seen substantial growth, becoming vital for economic development (Joveriya and Mariya 2019). Diverse tourism segments such as pilgrimage, adventure, nature-based, and cultural tourism contribute to this growth. The systematic review seeks to examine the trends in these segments, evaluating their adherence to the concepts of slow tourism. The effectiveness of government programs aimed at boosting tourism infrastructure and sustainable practices will be assessed about their effect on slow tourism. The assessment will examine strategies for managing tourism capacity and the role of slow tourism in promoting sustainability, considering the delicate nature of the ecosystem. Additionally, an assessment will be conducted to measure the level of community engagement and the preservation of cultural heritage to determine the extent of local involvement and fair distribution of benefits. An evaluation will be conducted to examine the

negative consequences of mass tourism, such as environmental deterioration and excessive population density. The primary emphasis will be on exploring how slow tourism might mitigate these problems. The evaluation aims to analyze the potential advantages and obstacles of adopting slow tourism, with a focus on creating sustainable offerings, establishing collaborations with stakeholders, and addressing issues related to infrastructural constraints and evolving tourist demands. The study seeks to evaluate the tourism environment of Uttarakhand and its capacity to incorporate and advance the ideas of slow tourism by examining these aspects.

1.2 Overview of Slow Tourism in Uttarakhand

Slow tourism in Uttarakhand promotes a sustainable strategy that encourages a relaxed pace, active involvement with the local community, and a stronger connection with the region's cultural legacy. This overview presents the framework for a systematic review, to investigate and comprehend the practices of slow tourism in Uttarakhand. (Serdane 2017) slow tourism emphasizes mindful, authentic experiences, advocating immersion in local culture and nature rather than a rushed checklist-driven approach. (Titus 2015) stresses sustainability, advocating responsible tourism to preserve the environment, culture, and community well-being. (Stylidis, Woosnam, and Tasci 2022) underscore cultural immersion, encouraging interaction with locals and participation in cultural activities for mutual understanding. (Said and Maryono 2018) highlight nature exploration and ecotourism, promoting conservation and appreciation of Uttarakhand's landscapes. (Chen and Zeng 2021) note the importance of health and well-being, emphasizing Uttarakhand's serene environment for relaxation and therapeutic activities. Additionally, (Ahlawat, Sharma, and Gautam 2019) emphasize the significance of local gastronomy in slow tourism, promoting regional cuisine and supporting local farmers.

Based on recent research In Uttarakhand, slow tourism is still developing, with a focus increasingly on sustainable practices and community-led projects. Homestays and environmentally friendly lodging have grown in popularity because they give visitors real experiences and help the areas in which they are located. There has also been a discernible trend in the travel industry towards experience tourism (Fusté-Forné 2023), with visitors looking for opportunities to engage in meaningful contacts with locals and take part in customs like organic farming (Pellegrini *et al.* 2023), handicraft creation, and cultural performances. This movement has promoted a deeper awareness of the area's natural heritage while aiding in the preservation of regional cultures and customs. Additionally, initiatives to encourage environmentally conscious outdoor recreation and trekking have lessened the negative effects of tourism on the environment, assisting with ecological conservation efforts in Uttarakhand's delicate ecosystems. All things considered, slow tourism is essential to encouraging sustainable growth and protecting Uttarakhand's distinctive natural and cultural legacy.

According to some recent studies in 2024, authors believe that tourism ecological security (Guo *et al.* 2024) is the basic guarantee for the sustainable development of tourist sites and there is a need to protect them. Some believe that after the devastating phase of the COVID-19 pandemic, sustainable forms of tourism (Gozzoli, Gozzoli, and Wattanacharoensil 2024) is the only solution to promote tourism in various destinations.

1.3 Slow Tourism Perspectives in Uttarakhand

Economic perspectives of slow tourism in Uttarakhand

Slow tourism in Uttarakhand holds significant economic promise, as discussed by (Moscarelli 2021), fostering sustainable growth in the tourism sector. Diversifying tourism goods is pushed, which encourages immersive experiences that meet the needs of niche markets (Vinerean 2013). This makes the tourist season longer and brings in a wide range of tourists all year long. One important part is local economic development, which gives communities more power by getting them more involved in tourism-related companies. This participation creates ways to make money, jobs, and economic equality. Aside from that, small businesses do very well because people want real local things. This brings back traditional crafts and skills. Promoting food that comes from nearby helps farms and producers, builds up local food systems, and keeps culinary traditions alive. Focusing on important experiences during slow tourism makes visitors stay longer, which increases spending in many areas and encourages more spending in local businesses. Additionally, following the principles of sustainable tourism, slow tourism helps protect natural and cultural assets, ensuring long-term income and keeping the region's appeal. In addition, it helps build the image of Uttarakhand as a place where people can find sustainable and culturally immersive experiences, which brings in tourists looking for real experiences (Ahlawat, Sharma, and Gautam 2019). By looking at these economic points of view in a planned way, we can learn more about the costs and possible benefits of slow tourism in Uttarakhand. This will help us understand how important it is for the long-term economic growth of the area.

Environmental sustainability and slow tourism in Uttarakhand

Environmental sustainability forms the cornerstone of slow tourism in Uttarakhand (Hall, Scott, and Gössling 2020). Nestled in the Himalayas, Uttarakhand boasts diverse natural wonders but faces environmental concerns due to rapid tourism growth. Slow tourism aims for sustainable practices to protect these fragile ecosystems for the long term. Preserving natural landscapes is a primary goal (Pentecost 2010), advocating responsible travel behaviours to minimize the carbon footprint. Slow tourists are encouraged to use eco-friendly transport like walking and cycling (Soininen, 2011) to reduce vehicular pollution and maintain ecological balance. Biodiversity protection (Timms and Conway 2012) is a focal point. Tourists are educated to respect local flora and fauna during nature activities. Sustainable resource use (Wondirad, Kebete, and Li 2021) is stressed, promoting responsible water use and supporting local communities in managing resources sustainably. Waste management (Janjua, Krishnapillai, and Rahman 2021) is prioritized, encouraging recycling, and reducing single-use plastics. Climate change resilience (Dickinson, Robbins, and Lumsdon 2010) is emphasized, urging tourists to participate in climate action initiatives. Slow tourism in Uttarakhand aligns with environmental sustainability by advocating responsible behaviours, conserving biodiversity, supporting sustainable practices, and fostering harmony between tourists and the environment. This study aims to deepen understanding of slow tourism's role in promoting environmental sustainability in Uttarakhand, contributing to the region's sustainable tourism practices.

Socio-cultural aspects of slow tourism in Uttarakhand

Slow tourism in Uttarakhand focuses on socio-cultural aspects, as emphasized by (Werner, Griese, and Bosse 2020), aiming to preserve cultural heritage and facilitate meaningful interactions between tourists and local communities. Cultural immersion is key, encouraging tourists to engage with local customs, traditions, and festivals, enriching their experiences while preserving Uttarakhand's heritage. Socio-economic empowerment is another facet, with slow tourism involving local communities in the tourism value chain (Salvo, Calzati and Soglia 2019). Supporting local businesses, purchasing local products, and participating in community-based initiatives empower artisans and entrepreneurs, aiding socio-economic development. Respect for local customs is paramount, educating tourists on cultural sensitivities and ethical conduct (Suhud *et al.* 2022). Follow cultural norms to build good relationships, understand other cultures, and protect sociocultural ideals. Additionally, slow tourism encourages cultural exchange through events such as art workshops and music shows, leading to more respect and close ties between tourists and locals. The deliberate examination of these social and cultural aspects aims to understand Uttarakhand's social and cultural aspects within slow tourism, thereby supporting long-term social and cultural growth and fostering cross-cultural understanding in the area.

Impacts on local communities and Stakeholders

The adoption of the slow tourism paradigm has a significant impact on local people and players in the tourism industry. The positive effects of slow tourism on communities encompass socio-economic empowerment (Rosalina, Dupre, and Wang 2021), fostering their active engagement in the tourism value chain. This empowerment facilitates the development of business, the generation of money, and the creation of employment prospects by providing genuine experiences and local products, while also maintaining traditional knowledge and cultural pride. Furthermore, the concept of slow tourism fosters community ownership (Giampiccoli and Saayman 2018) and active participation in decision-making processes, augmenting sustainability and inclusivity. It mitigates the effects of seasonality by prolonging the duration of the tourism season, so ensuring a consistent and reliable source of income for residents throughout the year. The preservation of cultural history has a huge influence by showcasing customs to tourists, creating cash, and conserving the region's cultural fabric. Nevertheless, it is crucial to handle difficulties such as cultural commercialization (YURTSEVEN and KAYA 2011) and dilution with caution, prioritizing the significance of local authority in managing cultural activities. This study emphasizes the significant beneficial effects of slow tourism on local communities in Indian state like Uttarakhand, promoting sustainable development and providing valuable knowledge for policymakers, practitioners, and researchers to encourage responsible growth of slow tourism in the region.

1.4 Slow Tourism Initiatives and Practices

The slow tourism projects in Indian state like Uttarakhand are varied and have a significant effect, as demonstrated by multiple case studies. Munsiyari Village Homestays, located in the picturesque village of Pithoragarh, provide travelers with an immersive rural experience through participation in farming, traditional culinary activities, and cultural showcases, all within the breathtaking natural surroundings. The primary objective of trekking in Kumaon is to provide sustainable trekking experiences that prioritize low environmental damage and cultural immersion. It involves staying in eco-lodges or camping, allowing visitors to connect with nature and local communities (Ahlawat, Sharma, and Gautam 2019). Ranikhet's Organic Farm Stays aims to foster

sustainable agriculture by providing educational opportunities for visitors to learn about organic farming techniques. Additionally, they offer farm-to-table experiences in authentic village cottages. Pangot entices ornithologists with ethical bird-watching prospects, promoting conservation and habitat preservation while fostering awareness of numerous avian species. Binsar's Village Walks offers guests the opportunity to gain a deep understanding of the local culture by participating in community interactions and learning traditional handicraft manufacturing. These walks aim to encourage community engagement and preserve the region's legacy (Masood and Nguyen 2018). These initiatives emphasize the abundant natural, cultural, and community resources of Uttarakhand while demonstrating sustainable techniques and community involvement. These locations serve as exemplary models for sustainable tourism development in other areas by deliberately curbing the rise of tourism and safeguarding local traditions.

Challenges and barriers to implementing slow tourism

The implementation of slow tourism in India has several problems that impede its success. The lack of proper infrastructure in rural areas (Haldar, n.d.), including insufficient road access and limited accommodation alternatives, hinders the ability to meet the demands of slow tourism. Furthermore, the lack of knowledge and understanding among local communities and stakeholders about the concepts of slow tourism necessitates the implementation of educational initiatives and awareness campaigns (Caffyn 2012). The pursuit of sustainable practices is hindered by the need to maintain business interests, particularly in countries heavily reliant on mass tourists. Seasonality affects the demand for tourism, requiring efforts to evenly disperse tourists throughout the year to maximize the benefits of slow tourism (Masberg 1999). Balancing cultural sensitivity, fulfilling tourist expectations, and preserving local authenticity pose a persistent problem. The lack of financial and expert resources hinders the progress and administration of delayed tourism projects, necessitating the need for skill development and assistance. Efficient cooperation among individuals or groups with a vested interest is essential for the achievement of slow tourism, requiring the establishment of partnerships and the implementation of decision-making processes that involve everyone. Overcoming these obstacles requires a collaborative endeavour that includes the participation of the government, local communities, tourism providers, and NGOs (Tasci, Croes, and Villanueva 2014). Proactively addressing these difficulties would facilitate the establishment of sustainable and responsible slow tourism, which will provide advantages to the local populations and the environment in various places of India like Uttarakhand.

Motivations and decision-making factor

The motivations for participating in slow tourism comprise a wide range of objectives, with a particular emphasis on seeking meaningful experiences (Caffyn 2012), establishing a connection with nature and culture, seeking relaxation, and enhancing overall well-being. Tourists choose to engage in slow tourism due to various significant factors. Primarily, numerous individuals desire to evade the rapid and anxiety-inducing environment of metropolitan living, yearning for the serenity provided by natural scenery to detach from technology and embrace a more leisurely rhythm. Moreover, India's scenic charm attracts tourists who engage in activities such as hiking and bird-watching to establish a connection with nature and admire its marvels, thereby promoting an environmentally conscious perspective (Ahlawat, Sharma, and Gautam 2019). Additionally, the affluent cultural legacy of Indian state like Uttarakhand entices tourists in search of genuine encounters, cultural submersion, and engagements with indigenous populations, cultivating a longing for a more profound comprehension of local existence and customs.

Also, tourists are putting more and more value on eco-friendly and responsible travel, which fits with slow tourism's focus on eco-friendly practices, community involvement, and environmental protection (Ballarini *et al.* 2021). As a bonus, slow tourism promotes mental health and relaxation by offering tourists the chance to find peace in the area's quiet surroundings and do yoga and meditation. Lastly, slow tourism lets visitors learn new things and grow as people through workshops, traditional skill-sharing, and cultural exchanges. This helps visitors feel more connected to the place, its people, and its natural and cultural history. Understanding these reasons helps tourism leaders to plan and support slow tourism experiences that meet the needs of visitors. They want to make offerings that are real, long-lasting, and culturally immersive, which will help slow tourism grow and be successful in the region (Masood and Nguyen 2018).

Hence, "Slow Tourism emphasizes a steady state mindful approach to travel and consumption patterns. With consideration for pressing issues like over-tourism, mass tourism, and the onslaught of the COVID-19 pandemic, it is pertinent to discuss viable alternatives to a fast-paced life and travel that we consider normal. One such alternative is slow tourism which accentuates sustainable tourism practices as well as tourism at a reduced pace. It endorses mindfulness in traveling and discovering destinations responsibly. Furthermore, slow travel

aims to promote tourists' consumption-oriented enjoyment of experience through slow-paced and low carbon emission travel patterns" (Klarin *et al.* 2023).

2. Methodology

The study commenced by formulating research objectives that directed the literature search, employing specific inclusion/exclusion criteria grounded in publication date, techniques, geographical relevance, and breadth. A thorough search was performed, utilizing various sources and keywords, to screen papers based on certain criteria through titles, abstracts, and full-text reviews. We extracted and analyzed essential data from the study, which included information such as authors, publication year, objectives, techniques, findings, and theoretical frameworks. We used relevant tools to assess the quality of the research design, data collecting, sample size, and analysis methods. Upon synthesizing and analyzing this data, we have identified recurring themes, patterns, and trends. These findings were then evaluated and presented, considering any limitations, with a fair and balanced perspective. The combined findings clarified the comprehension of slow tourism in Indian state like Uttarakhand, highlighting significant outcomes while providing suggestions for further research, policy implications, and potential areas for action. The study included a critical analysis of the research method, emphasizing how these findings answer the primary research questions and enhance the understanding of slow tourism in the region.

Inclusion and exclusion criteria for selecting studies: The study's inclusion criteria were comprehensive and covered various aspects. These included the requirement for the study to be relevant to slow tourism or slow tourism in general. The publication date had to be between 1990 and the present. The study could be of different types, such as qualitative, quantitative, case studies, theoretical frameworks, conceptual papers, or literature reviews. Additionally, the study had to be published in English. It should have a geographical focus on Indian state like Uttarakhand or discuss it as a case study. Furthermore, the study should explore slow tourism principles, practices, impacts, or perspectives, such as slow travel, local engagement, cultural exchange, sustainability, authenticity, and responsible tourism. Only studies that met these specific criteria were considered for inclusion in the research study. However, exclusion criteria were implemented to ensure the study on slow tourism maintains accuracy and relevance. The criteria for inclusion involved the exclusion of studies that did not directly address slow tourism or lacked specific insights about it. This included excluding non-peer-reviewed sources such as blog posts, opinion pieces, and news articles, as well as studies published in languages other than English. Additionally, research solely focused on different regions without mentioning or discussing Uttarakhand was excluded. Duplicate or redundant publications were filtered out, with preference given to the most comprehensive or recent studies. The criteria guaranteed that the analysis only contained reliable and relevant research that was in line with the objectives of the study.

Search strategy and data sources: The search technique employed for the study entailed the identification and incorporation of relevant terms, such as slow tourism, Uttarakhand (as an example), sustainable tourism, and cultural tourism. The researchers collected scholarly articles, conference papers, and unpublished reports by searching databases such as Google Scholar, Scopus, Web of Science, and PubMed, as well as tourism-focused publications and institutional repositories. In addition, the authors examined websites of professional associations like Cittaslow, UNESCO, etc., and examined reference lists to guarantee a comprehensive and varied compilation of knowledge, facilitating a meticulous examination of slow tourism.

Data extraction and analysis process: The data extraction and analysis procedure of the study (Harris *et al.* 2014) comprises multiple sequential processes. We have developed a uniform document to gather essential data from chosen research studies. The information provided will encompass the names of the authors, the year of publication, the study objectives, the techniques employed, the noteworthy findings, and the theoretical frameworks applied. The data is thereafter retrieved from the chosen studies and inputted into the form to ensure uniformity and precision. Subsequently, the obtained material is systematically arranged and condensed to emphasize essential attributes and discoveries. The data is examined through qualitative content or thematic analysis to uncover prevalent themes, patterns, and trends. Comparisons are made between the results of several research to discern commonalities, disparities, and repeating patterns about slow tourism. Significant insights and interpretations are obtained through the analysis of data, considering the constraints of the examined study. The results are consolidated into a cohesive storyline, highlighting significant themes and viewpoints. Ultimately, the findings are analyzed and deliberated within the framework of the study inquiries, goals, and current body of literature, examining the consequences and potential opportunities for future research, policy-making, and practical applications of slow tourism.

2.1 Implications

Practical Implications: It is crucial to develop sustainable tourism laws to effectively regulate the implementation of slow tourism, with a focus on protecting the environment and preserving cultural heritage (Guo *et al.* 2024). The policies should encompass trash management, biodiversity preservation, and community engagement. It is crucial to allocate resources towards the development of infrastructure, particularly in distant regions, and give priority to the implementation of sustainable practices. Furthermore, the implementation of community engagement and empowerment projects, the promotion of local firms, and the active involvement of stakeholders in joint endeavours can greatly contribute to the acceleration of slow tourism growth and the concept of "Homestays" became so popular in various locations of Uttarakhand, India; which not even promotes the local food, traditions, art & craft but also enhance the job and business opportunities for locals to get some stability.

Social Implications: The implementation of slow tourism methods entails giving priority to environmental conservation, community engagement, and cultural preservation. The implementation of policies that prioritize sustainable practices and community involvement seeks to improve the overall welfare of local communities by offering them economic prospects and safeguarding their cultural legacy. Collaborations between different stakeholders promote the sharing of knowledge, the development of skills (Chakraborty and Ghosal 2024), and the creation of tourism offerings that highlight cultural variety and promote equitable economic distribution, thus establishing a mutually beneficial interaction between residents and visitors.

Theoretical Implications: The slow tourism industry in Indian state like Uttarakhand presents numerous prospects for cooperation among government entities, local communities, tourism companies, educational institutions, non-governmental organizations (NGOs), and the private sector. This cooperation can help to advance the creation and execution of sustainable tourism policies, safeguarding of natural and cultural areas, promotion of innovation through research projects, and promotion of responsible tourism behaviours. The collaboration between academic institutions and the industry can result in the adoption of evidence-based practices, which improves the legitimacy of the sector and fosters the growth of sustainable tourism.

3. Results and Discussion

This systematic review comprises 70 selected studies that were chosen based on precise criteria for inclusion and exclusion. The encompassed papers addressed a diverse array of study subjects about the slow tourism paradigm. The selected research spanned a range of publication years, starting from 1995 and extending up to 2022 for the most current study. Most studies (75%) were completed between 2010 to 2022, suggesting a notable increase in interest in the topic in recent years.

Furthermore, this study has revealed deficiencies in the current body of literature, such as the absence of studies that concentrate on areas or a restricted inclusion of stakeholder viewpoints. These findings emphasize the necessity for additional studies to investigate these deficiencies and improve our comprehension of the slow tourism paradigm with India's context.

Table 1 (Caffyn 2012) provides an overview of the key themes/concepts of the included studies in the context of India's state named Uttarakhand which develop an understanding and knowledge about slow tourism and these key terms also help us to identify valuable studies in the field of slow tourism.

Figure 1. Flowchart of Study Selection Process (PRISMA) (Sumardi, Mahomed, and Najib 2021)
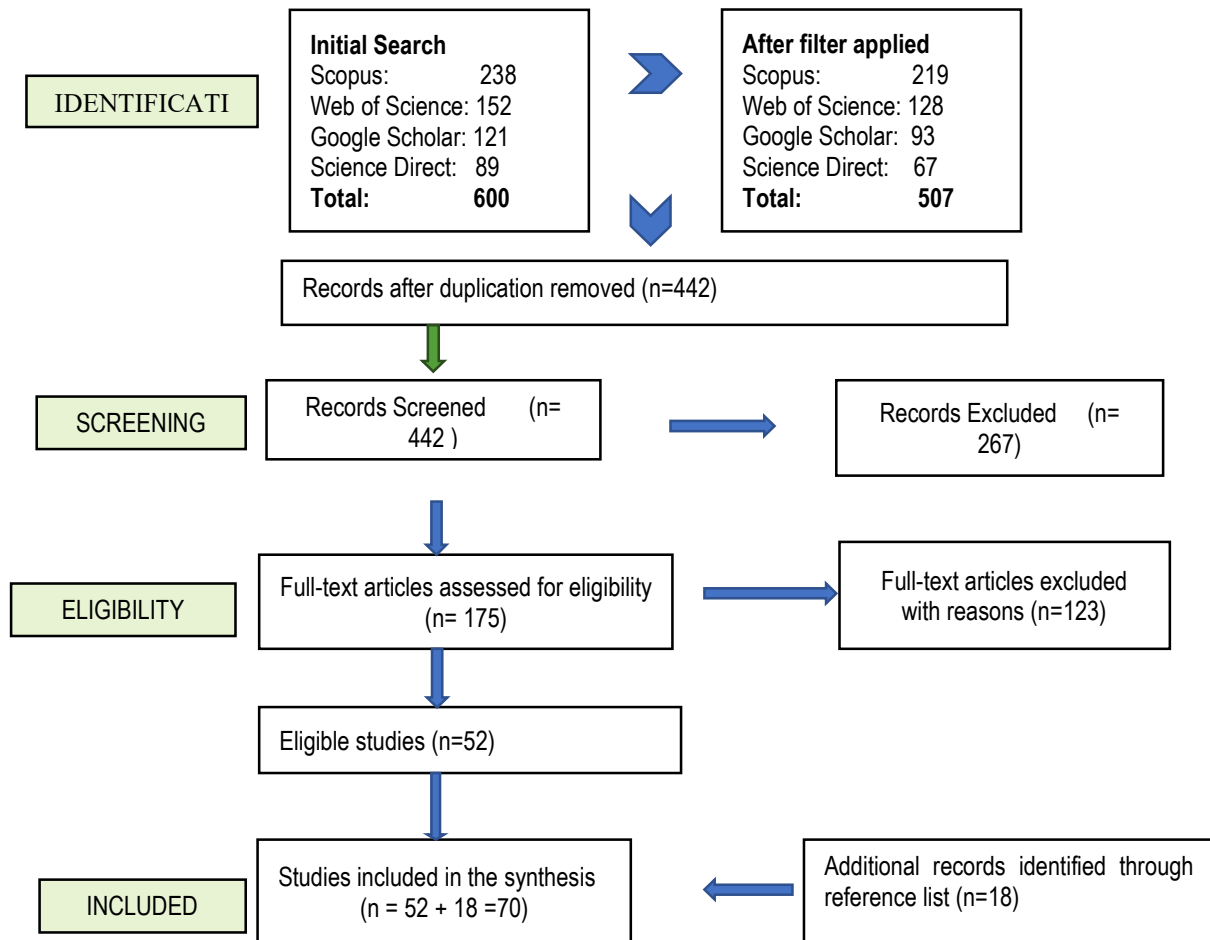
Table 4. Key themes/concepts

Key Themes/Concepts	Definition/Description	Relevance to India's state "Uttarakhand"
Quality over Quantity	Emphasizes the quality of the travel experience over the quantity	Uttarakhand is known for its scenic beauty and cultural heritage, and slow tourism can help tourists appreciate the quality of the experience over the number of destinations visited.
Community Engagement	Encourages visitors to connect with local communities	Uttarakhand has a rich cultural heritage, and slow tourism can help visitors connect with local communities and traditions, leading to a more authentic travel experience.
Environmental Preservation	Promotes the preservation of natural resources and the environment	Uttarakhand is home to several vital ecosystems, including the Himalayas and the Ganges River, and slow tourism can help promote environmental preservation and sustainability.
Cultural Preservation	Emphasizes the preservation of cultural heritage and traditions	Uttarakhand has a diverse cultural heritage with many unique rules and practices. Slow tourism can help preserve these cultural elements and promote sustainable tourism practices.
Local Sourcing	Encourages the use of local products and services	Uttarakhand has a prosperous agricultural and handicraft industry, and slow tourism can help promote the use of local products and services, leading to sustainable economic development.
Economic Development	Promotes local economic development and sustainable livelihoods	Uttarakhand is a predominantly rural state with limited economic opportunities. Slow tourism promotes sustainable livelihoods and economic development in rural areas.

Authenticity	Emphasizes authentic and meaningful travel experiences	Uttarakhand has a rich history and culture, and slow tourism can help visitors experience the destination authentically and meaningfully, leading to a more fulfilling travel experience.
Mindfulness	Encourages visitors to be mindful of their impact on the destination	Uttarakhand is a fragile ecosystem, and slow tourism can help promote responsible and sustainable travel practices, leading to a more positive effect on the goal.
Slow Food	Emphasizes local and traditional cuisine	Uttarakhand has a rich culinary heritage, with several unique dishes and ingredients. Slow tourism promotes local cuisine and supports the local food industry.
Active and Sustainable Transportation	Encourages walking, cycling, and other sustainable modes of transportation	Uttarakhand has several scenic routes that can be explored on foot or by cycling. Slow tourism promotes sustainable transportation and reduces the impact of tourism on the environment.

In Table 2, which shows the total number of papers from the past twelve years, it is clear that authors have become much more interested in studying slow tourism. This led to the idea of slow tourism, which has a good effect on the long-term health of the environment, society, and economy.

Table 5. Number of Publications by Year

YEAR	NUMBER OF PUBLICATIONS
2010	62
2011	72
2012	81
2013	96
2014	117
2015	142
2016	176
2017	211
2018	243
2019	298
2020	346
2021	387

Source: Kasemsarn and Nickpour 2017

Table 3 showcases the contribution of different nations towards the slow tourism approach, their implementation, and implications.

Table 6. Countries with the most Publications on slow tourism

Rank	Country	Number of Publication
1	Italy	76
2	Spain	45
3	France	36
4	United Kingdom	28
5	Portugal	20
6	Australia	16
7	Greece	15
8	Germany	12
9	Slovenia	10
10	Austria	9

Source: Mavric, Öğretmenoğlu, and Akova 2021

Table 4 elucidates the contributions of different authors in publishing and sharing their valuable findings in slow tourism, aimed at furthering our understanding of this subject.

Table 7. Most productive authors for slow tourism studies

Rank	Author Name	Number of Publications
1	Simone Fullagar	51
2	Tazim Jamal	48
3	Kevin Hannam	41
4	Anyu Liu	37
5	Scott McCabe	30
6	Richard Sharpley	26
7	Wendy Hillman	21
8	Pauline Sheldon	17
9	Jackie Clarke	13
10	Tomaz Kolar	9

Source: de Bruyn *et al.* 2023

Table 5 displays the names of several journals that are crucial in examining and researching the concept of slow tourism. It includes information about their publishers and specifies their purpose and goals in promoting and understanding slow tourism for the preservation of cultural values, environmental conservation, and social well-being).

Table 8. Significant journals on slow tourism

Journal	Publisher	Description About Journal
Journal of Sustainable Tourism	Taylor & Francis	Publishes research on sustainable tourism practices, including slow tourism
Tourism Geographies	Taylor & Francis	Focuses on the intersections of tourism and geography, including slow tourism
Annals of Tourism Research	Elsevier	Publishes high-quality research on tourism, including slow tourism
Journal of Tourism and Cultural Change	Taylor & Francis	Examines the relationship between tourism and cultural change, including slow tourism's impact on local communities
Journal of Ecotourism	Taylor & Francis	Publishes research on ecotourism and sustainable tourism, including slow tourism as a sustainable alternative
Journal of Hospitality and Tourism Management	Elsevier	It covers various topics related to hospitality and tourism, including slow tourism.
Current Issues in Tourism	Taylor & Francis	Focuses on current trends and issues in the tourism industry, including slow tourism
Journal of Heritage Tourism	Taylor & Francis	Examines the relationship between tourism and heritage, including slow tourism's potential to promote cultural preservation
International Journal of Tourism Research	Wiley	Publishes research on tourism from a variety of disciplinary perspectives, including slow tourism
Journal of Sustainable Development of Tourism and Creative Industries	Vilnius Gediminas Technical University	Focuses on the sustainable development of tourism and creative industries, including slow tourism as a sustainable alternative

Source: Klarin *et al.* 2023

Conclusion

This study emphasizes the crucial significance of slow tourism in fostering environmental conservation, socio-cultural preservation, and sustainable development, based on a thorough investigation of current literature. The study highlights the importance of promoting reliable travel behavior, safeguarding local traditions, and preserving the ecosystem. This study also offers a clear plan for policymakers, tourism stakeholders, and researchers to develop policies that prioritize sustainable tourism practices by recognizing both problems and opportunities. On a closing note, this study sheds light on how to promote a tourist business in one of the state of India called Uttarakhand that is both responsible and culturally beneficial. It aims to achieve a balance between tourism development and the conservation of the region's natural and cultural assets. This study makes a significant contribution to the field of slow tourism by providing a thorough and detailed inspection of its various features in the context of Uttarakhand. This research comprehensively examines the viewpoints, effects, difficulties, and potential advantages linked to slow tourism in the region by conducting a thorough examination and analysis of current literature. This study highlights the significance of sustainable practices, cultural preservation, environmental conservation, and socio-economic empowerment through slow tourism. This study also provides valuable insights and identifies gaps by reviewing various slow tourism studies. Therefore, this study significantly contributes to the growth and advancement of the slow tourism paradigm in the Uttarakhand region of India.

As a result, this study offers insightful information about how India's tourism industry is changing and what that means for sustainability by taking Uttarakhand as an example. Through an analysis of the most recent research findings, the paper clarifies the innovative strategies and projects in the field of slow tourism and emphasizes their value in supporting regional sustainability. Beyond emphasizing the value of experience travel and community-led tourism initiatives, the systematic study also highlights the necessity for ongoing efforts to promote eco-friendly tourism and responsible tourist practices. The report provides policymakers, practitioners, and researchers with a roadmap for advancing the sustainability of tourism in India's state "Uttarakhand" by highlighting gaps in the current literature and identifying areas for further research. All things considered, this research is an invaluable tool for comprehending the complex effects of slow tourism on the cultural preservation, economic growth, and environmental sustainability.

Recommendations for Future Research

This study offers suggestions for future research to improve the comprehension and execution of slow tourism in Uttarakhand and other states of India. These activities encompass conducting longitudinal studies to monitor the enduring effects of slow tourism, involving various stakeholders to comprehend their viewpoints and contributions, examining tourist behavior to customize experiences and services, evaluating the environmental and socio-cultural consequences of slow tourism, researching policy frameworks and planning strategies, conducting comparative studies with prosperous slow tourism destinations, exploring technology and innovation to enhance the slow tourism experience, and investigating community capacity building for sustainable practices. Implementing these proposals can propel the field forward and result in more efficient plans, regulations, and procedures for promoting sustainable tourism in multiple locations in India including "Uttarakhand".

Credit Authorship Contribution Statement

Jitender Bhandari: Project Administration, Writing- Review and Editing and Data Collection.

Vinay Rana: Literature Review, Methodology, and Supervision.

Shalini Singh: Data Analysis, Writing- Initial Draft and Interpretation of Results.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Factors Influencing the Development of Domestic Tourism in the Erongo Region, Namibia

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Abstract: Domestic tourism is viewed as the main driving force of the tourism industry in major economies globally. It has received worldwide recognition as a dynamic part of the industry with enormous potential for growth and is considered a useful tool for socio-economic development. However, in Namibia, as is the case with many developing countries, the sector is academically less explored and economically misrepresented. On that background, the main aim of this study was to understand the key factors influencing the development of domestic tourism in developing economies. The Erongo region of Namibia served as a case study. A structured questionnaire was used to collect usable data from 400 respondents. From this study, it was found that major obstacles to the development of domestic tourism in the study area include affordability and awareness issues, limited infrastructure, and poor government policies. While collaboration amongst stakeholders, robust government policies, and coordinated marketing efforts were identified as key determinants of domestic tourism development, they were also identified as key enabling factors. Consequently, the study recommends differential pricing, augmenting the marketing and promotion of tourism products to domestic tourists, and promoting collaboration among stakeholders.

Keywords: domestic tourism; development; hindering factors; enabling factors.

JEL Classification: O55; Z32; R11.

Introduction

Domestic tourism is the main driving force of the tourism industry in major economies globally, accounting for 72 percent of total travel and tourism spending in 2019 and 85% in 2021 (Jus, Tsering, and Mitcham, 2022). According to Nurov, Khamroyeva, and Kadirova (2021), the sector additionally plays a key role for governments around the world as the main source of financial income from tourism activities. Since it involves the movement of residents within their own country, it requires infrastructure related to transport and accommodation, and it may lead to interaction between the tourists and the host community. All these activities generate jobs and billions of dollars in revenues worldwide. The ease and convenience of travelling within one's own country encourage

domestic vacations and trips. As a result, the sector is imperative to the growth of the tourism industry and, thus, worldwide economic development (Rwigema, 2024).

In general, domestic tourism is perceived as a more sustainable and reliable form of tourism (Seyfi, Hall and Saarinen, 2022). Thus, various countries are presently capitalising on their domestic tourism to make it a feasible and competitive tourism item. This gave domestic tourism worldwide recognition as a dynamic part of the tourism industry with potential for sustainable growth and development. In fact, the aftermath of COVID-19 pandemic, rapid growth and increased potential economic value of domestic tourism (Adinolfi and Skotoyi, 2023) and a well-established stream of research in developed countries have created an increased discourse on this topic. As it turns out, domestic tourism has also received considerable attention from academia and researchers in Africa (see Rwigema 2024, Murima and Shereni 2023, Kifworo and Dube 2023, Matiza and Kruger 2022; Mato and Masoma 2022, Mapingure, Du Plessis and Saayman 2019; Basera, 2018).

In Namibia, however, little attention is paid to domestic tourism and its development by both policymakers and academia alike (Murima and Shereni, 2023). This practice has ignored the potential benefits of the emergence of domestic tourism. It has also hindered the sustainable development of domestic tourism in the country, particularly in the study area. Evidently, a considerable number of studies in different countries across the globe have provided a discourse on the key hindering and enabling factors for domestic tourism development in developing countries. While this study acknowledges the significance of work already done in this field, there remains a profound discontent with current national tourism policies in developing countries that focus on international tourism and ignore the potential of domestic tourism.

Dealing with this issue will require not only embracing the paradigms asserted in other developing countries but also making progress in development approaches in the study area. To fulfil such ambitions, this study provides an attempt to understand the key factors influencing the development of domestic tourism in the study area. To the best of the authors' knowledge, this study is the inaugural analysis of factors influencing domestic tourism development in the study area. This investigation is significant in that it provides the necessary baseline information on domestic tourism as a pivotal tool in sustainable development in the study area. The findings also provide a basis for further expansion of research into the development of domestic tourism in other regions of Namibia and in other developing economies.

1. Literature Review

Although interest in domestic tourism has made a quantum leap in recent times, finding a commonly accepted definition of domestic travel activity has remained a challenge (Llorca-Rodríguez, García-Fernández, and Casas-Jurado, 2020). Thus, domestic tourism is a subjective concept that is defined, applied, and embraced differently depending on circumstances and investigators (Kabote, Mamimine, and Muranda, 2017). Inevitably, the lack of commonly accepted and/or used definitions has made domestic tourist movements harder to track, subsequently making domestic tourism an invisible portion of total tourism activity to some degree.

Over the years, researchers have made several attempts to define domestic tourism, resulting in an array of mostly controverting definitions. However, in their own ways, these definitions form the basis for domestic tourism development globally. Some of the proposed definitions of domestic tourism consider the distance travelled away from the normal place of residence (Mokhefi, Hamoul, and Sawsan, 2017); some include same-day visitors (Quinn, 2010), while others exclude them (Williams, 1979). Others include only those travelling outside their usual environment (Aggarwal et al., 2024), neglecting visiting friends and relatives (VFRs) as a result, while some broadly include all travels in one's country of reference (Apriyanti, Sumaryoto and Meirinaldi, 2024). Based on Bakari (2021), it can be argued that the distinction between the two concepts of "usual environment" and "second home" can be blurred and often poses difficulty in considering VFR as a tourism activity.

Theoretically, however, it can be argued that domestic tourism cannot be confined to a general definition because various aspects of tourism generate disparate viewpoints. Albeit the conspicuous difference and contradiction in the definition of domestic tourism, fundamentally all definitions agree that the phenomenon encompasses the movement of a person within their own country. In this study's context, remaining consistent with established understanding, domestic tourism is defined as "the travel (and tourism activities) of residents within their own country for a day or overnight visit, for purposes of business, education, leisure, medical, entertainment, recreation, and VFR.".

On the premises of this definition, one can claim that most of the positive effects of inbound tourism demand on national economies are also valid for domestic tourism (Çuhadar, Kervankıran and Ongun, 2020). Equally important, a significant demand for domestic tourism can create circumstances and a conducive

atmosphere for the growth and advancement of international tourism (Mohammed-Benahmed and Seffih, 2019). Thus, the development of domestic tourism is of significant importance for both the developed and developing economies.

Conventionally, India, the United States of America (USA), and the People's Republic of China account for the largest domestic tourism markets (UNWTO, 2020). The UNWTO (2020) also highlighted Japan, Brazil, France, and Spain as some of the largest domestic tourism markets. Based on the Baniya and Paudel (2016) study, it can be argued that in South Asian countries such as India, Bangladesh, the Maldives, Sri Lanka and Pakistan, domestic tourism has a dominant role over international tourism in their aggregate tourism industry. As demonstrated by Chebli, Kadri, and Ben-Said (2021), domestic tourism in Algeria, like what is happening elsewhere, is witnessing the emergence of this mobility. Likewise, Nyikana and Bama (2023) and Rogerson (2015) expressed the opinion that, in the case of South Africa, domestic tourism represents a significant element of the country's tourism economy.

The low levels of passport ownership among the population in India (World Travel and Tourism Council [WTTC], 2018), the rapid growth of a local economy in China (Zhao and Liu, 2020), and domestic tourism marketing activity in the UK (Lu, et al., 2021) fuel domestic tourism development. This indicates that domestic tourism development drivers (and hindrances) vary from one destination to another, hence the need for this study in Namibia. On that background, the section that follows provides an attempt to understand some of the challenges developing countries are faced with in their efforts to develop their domestic tourism sectors.

1.1 Hindrance to Domestic Tourism Development: A Developing Country Perspective

The existing research suggests that domestic tourism, while widely practiced in many countries, is relatively undeveloped, particularly in developing nations like Namibia. The literature points to various hindering factors. Several studies around the world have argued that the high cost of tourism products and/or services is one of the biggest obstacles to domestic tourism development (Murima and Shereni, 2023; Mato and Masoma 2022, Poghosyan and Tovmasyan, 2021; Makhaola and Gerwel-Proches, 2017). According to Bakari (2021), the high cost of tourism goods and/or services has led to a problem with affordability among domestic tourists, which in turn restricts the growth of domestic tourism.

Another point of view suggests unemployment, poverty, and inequality as the main factors affecting the development of domestic tourism in developing countries (Bakari, 2021; Oladele, Digun-Aweto, and Van Der Merwe, 2018; Henama and Sifolo, 2015). For this reason, a low unemployment rate is pivotal to domestic tourism development. Poghosyan and Tovmasyan (2021) argued that as the level of employment rises, so does disposable income, which will result in an increase in domestic tourism activities, supporting this viewpoint.

The literature on the domestic tourism development domain also shows conclusively that there have been several policies globally that have affected the development of domestic tourism. In Iran, for example, the 2007 gasoline rationing policy, a security-economic decision to reduce fuel consumption in Iran (120 litres of petrol per person per month), is one such example that had negative impacts on domestic tourism as it increased travel expenses dramatically (Ghaderi, 2011).

Mutsena and Kabote (2015) also claimed that the land reform and indigenisation policy and the economic policy have had a negative impact on Zimbabwe's economy, resulting in the poor performance of domestic tourism in the country. In addition, industry focuses such as the reorientation of the city's leisure offerings towards the market of long-haul international travellers in Cape Town, South Africa, have resulted in the displacement of domestic tourists as tourism products and/or services became inaccessible for locals (Henama and Sifolo, 2015). According to Mato and Masoma (2022) and Kifworo, Okello, and Mapelu (2020), in many developing countries, monotonously-perceived tourism offerings have led to more people travelling abroad in search of variety. This subsequently hinders developing countries' ability to tap into the full potential of domestic tourism.

Other notable hindrances to domestic tourism development include the absence of a domestic tourism development strategy (Mehiret, 2019), inadequate tourist infrastructure (Leonidova, 2017), inadequate promotion of domestic tourism (Ronoh, 2022), local interpretations of tourism (Melubo, 2020) and a lack of travel culture (Morupisi and Makgalo, 2017). Consequently, this study argues that there is a need for developing countries to develop domestic tourism policies and strategies that are centred around domestic tourism planning and sustainable development. Therefore, the section below looks at some of the key policies and strategies that have aided the development of domestic tourism globally.

1.2 Domestic Tourism Development Strategies: Key Factors for Sustainability

Tourism policy and planning have played a crucial role in the advancement of tourism for many years and have been recognised as a significant priority on the global political agenda. However, derived from evidence provided in the section above, it can be argued that there is a lack of policies and strategies targeted at domestic tourism development in some developing countries. Using practical examples and research recommendations from schoolers, this section explores the many policies and strategies that are being adopted globally in an effort to drive domestic tourism growth.

A number of studies in different countries across the globe have provided a dialogue on key strategies for domestic tourism development. Some studies highlighted infrastructure development as key to domestic tourism growth in developing countries (Archer, 1978; Makhaola and Gerwel-Proches, 2017). This view is supported by Chebli, Kadri, and Ben-Said (2021), who's study asserted that the enhancement of transport infrastructure is critical to the development of domestic tourism.

China conceivably provides the best model for the aforementioned strategy as its investment in the development of a rail network and air infrastructure improved transportation connectivity, reinforced visitation in remote areas, and augmented the development of domestic tourism (WTTC, 2018). As duly observed by Arteeva, et al., (2022), there is a correlation between infrastructure development and the development of domestic tourism.

Another seminal contribution on this topic has been made by Sindiga (1996) and Kifworo, Okello and Mapelu (2020) highlighting tourism product diversification as a key strategy for domestic tourism development. By offering a wider array of experiences, destinations can better meet the evolving tourists' demands and remain competitive in the long run. Just as important, other authors have raised an essential point of formulating a national domestic tourism growth strategy to give a clear direction and framework for enhancing the level of domestic tourism (Descarten, 2023; Efimova, Levochkina and Khabibullina, 2021; Muliawaty, Alamsyah and Loupias, 2019; Isiaka and Isiaka, 2019). Certainly, a national domestic tourism growth strategy may maximise the potential of domestic tourism and contribute towards national tourism policy development (Rogerson, 2015).

Scholars such as Mato and Masoma (2022), Nurov, Khamroyeva, and Kadirova (2021); Aina and Ezeuduji (2021) and Chan (2021) emphasise that domestic tourists in developing countries have difficulties affording travel costs; therefore, competitive prices, discounts and price bundling may be key to stimulating domestic tourists' demand for tourism products. Fundamentally, reducing the price of products will increase tourism consumption among domestic tourists and subsequently promote sustainable development of the tourism industry (Shen, 2020).

It is also suggested that marketing and promotion of destinations to domestic tourists can provide the momentum for the development of domestic tourism (Kinuthia, 2019; Ogbonna, Ibe, and Ikegwu, 2018; Osiako and Szente, 2021). This denotes creating targeted strategies to attract and engage with the local population. Now that a set of policies and strategies that can enhance the development of domestic tourism has been established, it becomes necessary to take a brief look into domestic tourism in the study area.

2. Materials and Methods

This study utilised quantitative research methodology. Data was collected using a recently created questionnaire that drew on prior research including Basera (2018), Leonidova (2017); Ministry of Environment, Forestry, and Tourism [MEFT] (2016); Rogerson (2015); Ndlovu, Nyakunu, and Heath (2011) and Aina and Ezeuduji (2021). The sample size for this study consisted of 400 respondents in total. The study employed a non-random sampling method that involved a combination of convenience sampling techniques, which targeted domestic tourists at popular tourism destinations in the region, and snowball sampling techniques, which targeted domestic tourists through an online survey using Google Forms, to gather quantitative data. During a two-week period between September and October 2023, face-to-face surveys and web-based surveys were done as part of this study.

The data were recorded using Microsoft Excel™ and data analysis was conducted using Stata 17.0 SE. The interpretation relied on the mathematical metric of the spread of the gathered data. Each two-factor analysis utilised a 5-point Likert scale to mathematically measure the data and achieve consensus. The metric yields a singular value that spans from one (1) to five (5).

To simplify the data, a dimensionality reduction approach called exploratory factor analysis (EFA) was performed on both hindering and enabling variables. Both analyses utilised the principal component analysis (PCA) approach of factor analysis, employing the varimax orthogonal rotation methodology. Factors that have eigenvalues larger than 0.50 were kept based on the Kaiser criterion, as recommended by Osborne (2014). Prior to doing factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test were employed. Only factors with eigenvalues over 1 were preserved, as suggested by Cliff (1988). According to Hair

et al. (2014), only items with factor loadings higher than 0.5 were included for the final factor structure in this investigation.

The researchers calculated the composite reliability (CR) to assess the internal consistency of the factor, which measures the consistency between numerous measurements of a variable (Bacon, et al., 1995). In addition, the Average Variance Extracted (AVE), which measures the convergence among the assets of items representing a latent construct (Hair et al., 2014), was also calculated. Stata 17.0 SE was utilised to conduct Kruskal-Wallis tests, Chi-Square testing, and Spearman's rank-order correlation tests as the concluding phase of data analysis. The Kruskal-Wallis test was employed to compare demographic variables and trip characteristics with the identified determinants.

The analysis was conducted with a confidence level of 95%, indicating that the likelihood of the results happening by chance is low. The observed disparities in the sample were indeed present in the larger population from which it was selected. Gelman (2012) states that in social sciences research, a P-value of less than 0.05 is considered the threshold for significant differences. Hence, this study solely presents findings on statistically significant connections (P-values <0.05) observed among the variables under investigation. The research placed significant emphasis on ethical considerations. After obtaining ethical approval, the researcher sought permission to gather data from the participants. The respondents were granted autonomy to complete the questionnaires.

2.1 Study Area

The Erongo region is one of the 14 administrative regions of Namibia; it covers an area of 63,586 km² (Namibia Statistics Agency (NSA), 2014) and has a population of 240,206 inhabitants (NSA, 2024). The region hosts several tourist attractions, such as the city of Swakopmund, Walvis Bay, Henties Bay, the Namib desert, the Brandberg with its famous rock paintings, and the Spitzkoppe Mountains. The map of the study area is depicted in Figure 1 below.

Source: Erongo Regional Council (2023)

According to the Namibian domestic tourism expenditure survey, in 2015, the study area accounted for 21 percent of the recorded domestic tourists in the country, which translates to 1.21 million tourists (MEFT, 2016). This cements the study area's status as the main hub of domestic tourism in Namibia and makes it an appropriate study area for this research.

As is the case with many other themes and issues surrounding Namibia, there exists a lack of dependable, current, and quantitative data on the tourism industry in the country (Remmert, 2022) and the study area in particular. Furthermore, domestic tourism development in the region has not been without its own challenges. One of the major risks facing tourism in the study area is the overdependence on international tourist arrivals (Lendelvo et al., 2022).

This has resulted in most of the tourism marketing being focused on international tourists, jeopardising the region's ability to fully develop its domestic tourism sector. Moreover, although domestic tourism has evolved in recent years, there has been little to no research done in the region to investigate factors influencing the development of domestic tourism. This study provides an attempt to fill this gap.

3. Research Results

3.1 Respondents Profile

According to Wangombe, Njoroge, and Agufana (2022), demographics play a crucial role in shaping how a destination is segmented, positioned, and branded in marketing strategies. These characteristics provide the motivation for both physical and immaterial variations in the way visitors think, feel and act (Lötter, Geldenhuys, and Potgieter, 2012). A short demographic profile of the respondents is illustrated in Table 1 and a short elaboration is provided thereafter.

Table 1. Demographic and trip characteristics.

Variables	Categories	Frequencies	Percentages
Gender	Male	158	39.50
	Female	**242**	**60.50**
Age	Baby Boomers (1946-1965)	9	2.25
	Generation X (1965−1979)	81	20.25
	Millennial (1980-1994)	**237**	**59.25**
	Generation Z (1995-2005)	73	18.25
Education	No Schooling	1	0.25
	School Leaving Certificate	74	18.50
	Diploma / Degree	**204**	**51.00**
	Postgraduate	120	30.00
	Others	1	0.25
Marital status	Married	141	35.25
	Divorced/Separated	5	1.25
	Widowed	4	1.00
	Never married	**180**	**45.00**
	Living with partner	70	17.50
Number of visits	1 time	21	5.25
	2-4 times	80	20.00
	5 or more times	**299**	**74.75**
Purpose of visit	Leisure / vacation / holiday	**224**	**56.00**
	Visiting friends and family	91	22.75
	Business/conference	19	4.75
	Attending a wedding / funeral	34	8.50
	Religious activities	5	1.25
	Medical	2	0.50
	Others	25	6.25
Accommodation used	Lodge	26	6.50
	Hotel	**91**	**22.75**
	Airbnb	44	11.00
	Guesthouse	83	20.75

Variables	Categories	Frequencies	Percentages
	Camping	32	8.00
	Second/holiday home	26	6.50
	Friends/Family house	86	21.50
	Other	12	3.00
Length of visit	Day trip	17	4.25
	1-night	15	3.75
	2-4 nights	**269**	**67.25**
	5 or more nights	99	24.75
	Others	25	6.25
Mode of transport	Airplane	9	2.25
	Bus	51	12.75
	Own car	**259**	**65.75**
	Motorcycle	1	0.25
	Taxi / Public transport	77	19.25
	Train	1	0.25
	Other	2	0.50

Source: Own Research

In summary, the surveyed domestic tourists visiting the Erongo region were mostly female. They were primarily from the millennial generation and had at least attained a diploma or degree. The results show that most of the surveyed tourists had visited the region five (5) times or more and had never been married. The results further indicate that the respondents in this study typically visited the region for leisure, vacation, or holiday purposes, stayed between two (2) and four (4) nights and used their own car to travel to the study area.

3.2 Factor Hindering Domestic Tourism Development

In this section, the respondents were asked to rate their level of agreement with the hindering factors statements. The descriptive results are grouped under the theme "hindering factors" and presented in Table 2. The factor analysis process produced a relatively refined and moderately correlated three-component model with eigenvalues greater than 1 and coefficients above 0.5. The model explained 53.753% of the total variance. The KMO of the modified four-component models was 0.813, while Bartlett's test of sphericity p-value < 0.0001 indicated that there were adequate correlations among variables to proceed. The three retained components are depicted in Table 2 and discussed in detail thereafter.

Table 2. Factor analysis: hindering factors

	FL	VE	Eigen	CR	AVE	WM
F1: Affordability and awareness issues	**0.691**	**30.603%**	**4.284**	**0.82**	**0.479**	**4.200**
Unemployment, poverty, and inequality	0.677					4.230
Limited awareness of domestic tourism	0.707					4.107
Poor marketing and promotion	0.736					4.190
Historical legacies	0.655					3.973
Namibia's current economic state	0.683					4.407
F2: Limited infrastructure	**0.821**	**13.942%**	**1.951**	**0.86**	**0.676**	**3.047**
Poor quality tourism services	0.812					2.803
Inadequate tourist infrastructure	0.870					3.007
Poor transport infrastructure	0.775					2.712
F3: Poor government policies	**0.752**	**9.289%**	**1.289**	**0.80**	**0.578**	**3.580**
Poorly developed policies	0.778					3.737
Lack of capacity at government level	0.875					3.513
Lack of cooperation between stakeholders	0.603					3.490

FL= Factor loading, **VE**= Variances explained, **Eige.**.= Eigenvalues, **CR**= Composite reliability, **WM**= Weighted Mean
Source: Own Research

Factor 1: Affordability and awareness issues

As this factor reflects on the effect of themes such as unemployment, poor marketing, historical legacies, and economic state on domestic tourism development, it was labelled "affordability and awareness issues." The factor received the highest weighted mean value of 4.284 and is therefore the main hindering factor for domestic tourism development in the study area.

Factor 2: Limited infrastructure

The three items on the second identified factor are primarily statements dealing with the poor and/or inadequate state of infrastructure and tourism services. Therefore, it was labelled "limited infrastructure." The three items in this factor have high loadings, ranging from.870 to.775, with a weighted loading score of.821. This indeed indicates a very high interrelationship between the items. This factor received a weighted mean value of 3.047, which is the lowest of the three identified factors.

Factor 3: Poor government policies

The three items in this factor also have high loadings, ranging from.875 to.603, which translates to a weighted loading score of 0.752. As this factor reflects themes related to poorly developed policies, lack of capacity at the government level, and lack of cooperation between stakeholders, it was labelled "poor government policies." The factor received a weighted mean score of 3.580.

As shown in Table 2, the CR values indicated that all three factors have superior composite reliability, which is greater than the advanced phase value of 0.7 as established in Section 5.3.4 of this chapter. Furthermore, the AVE column ranges from 0.502 to 0.788. Therefore, it can be concluded that all items adequately converged to their respective latent constructs.

The Kruskal-Wallis test was employed to compare the discovered hindering factors and demographic and trip characteristics. The significant relationships encountered between the hindering factors and demographic and trip characteristics are set out in Table 3.

Table 3. Comparison between hindering factors and demographic, and trip characteristics

	Chi-Square (2)	Df.	P-value
F1: Affordability and awareness issues			
Age group	19.582	3	0.000
Marital Status	11.200	4	0.024
Number of visits	13.818	2	0.001
Purpose of visit	9.830	6	0.003
Length of stay	10.844	3	0.012
F2: Limited infrastructure			
Mode of transport	25.937	6	0.000
Sources of information	16.329	7	0.022

Source: Own Research

The results above indicate that there is a significant relationship between two of the three identified hindering factors and demographic and trip characteristics. This is substantiated by statistically significant differences in scores between these affordability and awareness issues and age, marital status, number of visits, purpose of visit, and length of stay. The encountered relationships are represented by P-values of 0.000, 0.024, 0.001, 0.003, and 0.012, respectively. While a comparison between limited infrastructure and mode of transport was represented by a P-value of 0.000, the difference in score between sources of information in relation to limited infrastructure was represented by a P-value of 0.022. The post hoc test results indicate that this factor was rated highly by married respondents, those who visited the study area 2–4 times, and those who spent 2–4 nights. These are statistically validated by a rank mean of 220.726, 211.581, and 211.00, respectively.

This section established the factors hindering the development of domestic tourism in the study area and the significant differences between these factors and the demographic and travel characteristics. With these understandings in mind, the segment below explores the factors that could enable the development of domestic tourism in the study area.

3.3 Enabling Factors Domestic Tourism Development

In order to generate a clearer description of these enabling factors, an EFA was performed on the 14 mentioned enabling constructs. The EFA produced a relatively refined and moderately correlated five-component model with

eigenvalues greater than 1 and coefficients above 0.5. The model explained 66.514% of the total variance. The KMO of the modified four-component models was 0.764, while Bartlett's test of sphericity p-value < 0.0001 indicated that there were adequate correlations among variables to proceed. The five retained components are depicted in Table 4 and discussed thereafter.

Table 4. Factor analysis: enabling factors.

	FL	VE	Eigen	CR	AVE	WM
F1: Affordable prices	**0.761**	**30.773%**	**4.308**	**0.81**	**0.592**	**4.135**
Attractive pricing	0.610					4.468
Discounted packages	0.797					4.165
Price bundling	0.878					3.772
F2: Collaboration amongst stakeholders	**0.917**	**10.618%**	**1.486**	**0.91**	**0.840**	**3.999**
Community involvement, benefit	0.922					3.998
Co-ordination between stakeholders	0.912					4.000
F3: Robust government polices	**0.909**	**9.430%**	**1.320**	**0.90**	**0.909**	**3.999**
Well-developed government policies	0.919					3.980
Government support	0.899					4.013
F4: Coordinated marketing efforts	**0.673**	**8.175%**	**1.144**	**0.71**	**0.454**	**3.887**
Promoting unique tourist attractions	0.696					4.053
Enhanced Self-regulation	0.656					3.703
Promotion, awareness, and marketing	0.676					3.905
F5: Enhanced tourism offerings	**0.768**	**7.518%**	**1.052**	**0.81**	**0.593**	**4.261**
Development of new tourism products	0.696					4.372
Better management of infrastructure	0.838					4.202
Improved safety and security	0.770					4.210

FL= Factor loading, **VE**= Variances explained, **Eige.**.= Eigenvalues, **CR**= Composite reliability **WM**= Weighted Mean
Source: Own Research

Factor 1: Affordable prices
The five items in this factor have high loadings, ranging from.878 to.610 (.761 weighted loading score), which indicates a high interconnection of the items. As this factor reflects attractive pricing, discounted packages, and price bundling, it was labelled "affordable prices." The factor received a weighted mean value of 4.135.

Factor 2: Collaboration amongst stakeholders
The two components within this factor display substantial loadings of.922 and.912, resulting in a weighted loading score of.917. This suggests a strong correlation between the items. Since this factor relates to community involvement and coordination between stakeholders, it was labelled "collaboration amongst stakeholders." The factor received a weighted mean value of 3.999.

Factor 3: Robust government policies
The third identified enabling factor for domestic tourism development in the study area was labelled "robust government policies" because it relates to well-developed government policies and government support. The factor received a weighted mean score of 3.999. It is apparent from the results that there exists a pronounced positive correlation among all variables.

Factor 4: Coordinated marketing efforts
The fourth factor was labelled "coordinated marketing efforts" as it relates to promoting unique tourist attractions; enhanced self-regulation; and promotion, awareness, and marketing. The items loading in this factor range from.656 to.696 and received a weighted mean score of 3.887.

Factor 5: Enhanced tourism offerings
The three components in this factor display relatively elevated loadings, ranging from.770 to.696, which resulted in a weighted loading score of.768. As this factor reflects the development of new tourism products, better management of infrastructure, and improved safety and security, it was labelled "enhanced tourism offerings.".
CR scores in Table 4 indicated that all five factors have superior composite reliability, which is greater than the advanced phase value of 0.70. Furthermore, the AVE column ranges from 0.454 to 0.909, which indicates an adequate convergence of all items to their respective latent constructs.

The Kruskal-Wallis test was employed to compare the discovered enabling factors to demographic and trip characteristics. The significant relationships observed between the enabling factors and demographic and trip characteristics are set out in Table 5.

Table 5. Comparison between enabling factors and demographic, and trip characteristics

	Chi-Square (2)	Df.	P-value
F1: Affordable prices			
Gender	6.476	1	0.010
Age	15.227	3	0.001
Level of education	11.980	3	0.017
Purpose of visit	20.129	6	0.002
F2: Collaboration amongst stakeholders			
Purpose of visit	34.594	6	0.000
Type of accommodation	16.277	7	0.022
F3: Robust government policies			
Gender	4.829	1	0.028
Purpose of visit	17.655	6	0.007
F4: Coordinated marketing efforts			
Marital Status	9.611	4	0.047
Purpose of visit	29.610	6	0.000
Type of accommodation	18.368	7	0.010
Sources of information	22.727	7	0.001
F5: Enhanced tourism offerings			
Purpose of visit	8.250	3	0.041

Source: Own Research

The results in Table 5 indicate that there is a significant relationship between affordable prices and demographic and trip characteristics, as both demographic and trip characteristic variables are significantly related to this factor. These are statistically supported by P-values of 0.010 for gender, 0.001 for age, 0.017 for level of education, and 0.002 for purpose of visit. A comparison between the purpose of the visit and collaboration amongst stakeholders was represented by a P-value of 0.000, while a comparison between the latter and the type of accommodation was represented by a P-value of 0.022. A Kruskal-Wallis H test further showed that there was a statistically significant difference in score between robust government policies in relation to gender and purpose of visit. The encountered relationships are represented by P-values of 0.020 and 0.007, respectively. A Kruskal-Wallis H test showed that there was a statistically significant difference in score between coordinated marketing efforts and marital status (P-values of 0.047), purpose of visit (0.000), type of accommodation (0.010), and source of information (0.001). The results also showed that there was a statistically significant difference in score between enhanced tourism offerings and age, represented by a P-value of 0.041.

The post hoc test results indicate that affordable prices are rated highly by females, those from the millennial age group, those with other levels of education, and those who travel for business purposes in comparison to other categories of the same variables. These are statistically substantiated by a rank mean of 212.386, 217.592, 2.79.500 and 238.868, respectively. The post hoc test results also indicate that statistically, male respondents (216.221) rated robust government policies higher than female respondents (190.235). The post hoc test results also indicate that coordinated marketing efforts were rated highly by widowed respondents, those who travel for business purposes, those who stay at lodges and those who use advertisements as a source of information in comparison to other categories of the same variables. The post hoc test results indicate that statistically, respondents from the Baby Boomers age group rated enhanced tourism offerings higher than those from the Generation Z age group.

6. Discussions

Affordability and awareness issues emerged as the main challenges to domestic tourism development in the study area. A closer look at the literature indicates that this finding should have been expected. Indeed, the unaffordability of tourism products for domestic tourists is regarded as the greatest challenge to domestic tourism

development in Namibia (Murima and Shereni, 2023). Another element in this factor, unemployment, was also noted to have affected Namibians level of participation in domestic tourism for many years (Ndlovu, Nyakunu, and Heath, 2011). Lendelvo et al. (2022) also noted that insufficient domestic tourism marketing and promotion was a hindrance to domestic tourism development in the study area.

According to this study, there is a lack of infrastructure in the study area that affects domestic tourism. The study by Leonidova (2017) also identified inadequate tourist infrastructure as one of the main factors impeding the growth of domestic tourism in Russia. While the effect of poor tourism offerings on domestic tourism development was also highlighted by Henama and Sifolo (2015).

This study also underscored poor government policies as a hindering factor in domestic tourism development in the study area. This finding was not a surprise, as lack of capacity at the government level, in terms of both the administrative and technical skill base, is a serious problem in many developing nations (Clayton, 2002). In the Namibian context, Ngatjiheue (2019) noted that inadequate government's policies, regulations, and limited knowledge of the tourism industry hamper the industry's growth. Similarly, Jänis (2014) identified a significant obstacle to Namibia's tourism development as a lack of cooperation between stakeholders.

On the other hand, affordable prices emerged as the main enabling factor. The finding aligns with similar suggestions made by Aina and Ezeuduji (2021) and Chan (2021), who highlighted attractive pricing, discounted packages, and price bundling as critical to the development of domestic tourism in South Africa and Malaysia, respectively. Collaboration amongst stakeholders was also discovered as a possible enabling factor. This finding confirmed Graci's (2013) and Kavita and Saarinen's (2016) arguments that community involvement and collaboration between stakeholders in tourism are critical for domestic tourism development.

This study also reveals the importance of robust government policies for the development of domestic tourism in the study area. This finding was not unexpected since Slocum and Backman (2011) emphasised that the attainment of sustainable development, particularly in developing nations' tourism sectors, hinges on the presence of good governance. While government support was credited for domestic tourism growth in Serbia by Teodorović, Popesku, and Pavlović (2019).

Coordinated marketing efforts also emerged as an enabling factor for domestic tourism development in this study. This supports the findings of Osiako and Szente (2021) in Kenya, which highlighted all three elements under this factor as critical to the development of domestic tourism. The study also indicated that the enhanced tourism offerings will have a positive effect on domestic tourism development. This discovery substantiates the recommendations made by Tonda and Iglesias (2021), who stipulated that in order to achieve sustainable domestic tourism development, a more extensive, diversified offering is required. Consequently, it is pivotal for domestic tourism suppliers to design and develop customised products and packages that appeal to domestic tourists.

Conclusions and Further Research

The literature indicates that little attention is paid to domestic tourism and the factors influencing its development by both policymakers and academia alike in Namibia. Evidently, the array of policies and strategies portrayed in the literature of this study have been proven to change the trajectory of domestic tourism development and have made domestic tourism one of the sectors with the highest expenditure globally. From this study, affordability and awareness issues, limited infrastructure, and poor government policies emerged as the main constraining factors for domestic tourism development in the Erongo region. The study has also revealed that the country's colonial past has had a hindering effect on the development of domestic tourism due to issues such as leakage and overdependence on international tourists. The results show that a lack of coherent plans for domestic tourism development and capacity at the government level has negatively impacted the development of the sector. It emerged from the study that there is a lack of marketing of tourism products to domestic tourists.

The problem here is not the lack of tourism marketing but rather the fact that most of the marketing is done for and in international markets. Thus, it is important to address the disparity in the attention paid to international and domestic tourism (with bias towards the former) in order for the country to fully develop its domestic tourism sector. The study also highlighted affordable prices, collaboration amongst stakeholders, robust government policies, and coordinated marketing efforts as key determinants of domestic tourism development. It is believed that by addressing constricting factors and enhancing enabling factors, the region can be well on its way to attaining sustainable domestic tourism development.

This study only examined the Erongo region and used quantitative research methodology to survey 400 domestic visitors. The sample strategy employed was non-random, utilizing convenience and snowball sampling methods. Hence, it is important to carry out comparable investigations in other parts of Namibia to ascertain if the

factors influencing domestic tourism development are uniform or varied across other regions. Future study may also investigate alternate research designs and approaches to measure possible changes in these parameters over time.

Based on the findings of this study, it is pivotal for tourism suppliers to introduce a differential pricing strategy. Unemployment and the study area's economic status mean domestic tourists cannot afford tourism products and services, which are priced based on the international market. Therefore, having two pricing models, one for the international market and another for the domestic market (with the one for the latter being on the lower scale), is necessary for the development of domestic tourism. Such a strategy should be targeted at millennials, business travellers, female tourists, repeat visitors, and those who stays for longer than two nights.

Limited awareness was highlighted as one of the major challenges facing domestic tourism development in the study area. To avert this, domestic tourists need to know about tourism and the impacts of tourism in their daily environment. This calls for robust marketing and promotion campaigns of tourism products to domestic tourists. Making domestic tourists aware of tourism could help them become both contributors and advocates for domestic tourism development in the region. This will increase tourism consumption among domestic tourists, especially those who use advertisements as a source of information, business travellers, and those who stay at lodges.

There is a need to encourage collaboration amongst tourism stakeholders in the study area. Indeed, dynamic collaboration among stakeholders may help to promote sustainable tourism practices and ensure that the benefits of tourism are shared equitably. By promoting responsible tourism practices, the study area and other developing economies can ensure the long-term viability of domestic tourism and protect the environment and local communities.

It is also clear that there is a need to pay specific attention to domestic tourism development at the policy level. This study, therefore, recommends the development of a domestic tourism growth strategy that is centred around domestic tourism planning and development. The availability of such a strategy may lead to improved public and private sector partnerships, improved geographic spread of tourism, harmonious objectives of line-function institutions, and reduced reliance on international tourist arrivals in the study area.

Last but not least, poor tourism products were highlighted as one of the factors hindering domestic tourism development in the study area. Therefore, it is pivotal for tourism suppliers to design and develop customised products and packages in such a way that they appeal to domestic tourists. This will increase domestic tourism consumption, especially among the older generation (the Baby Boomers), who have time and money to spend.

Credit Authorship Contribution Statement

Ebson Ngondo: Conceptualisation, investigation and writing – original draft.
Uwe P. Hermann: Conceptualisation, investigation and writing – original draft.
Dewald H Venter: Conceptualisation, investigation and writing – original draft.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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Inclusive-Based Deductive Training Model for Tour Guide in Goa Pindul

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Abstract: Tourism is an important industrial sector for the country's economy. Yogyakarta is a province with numerous tourist attractions, including Pindul Cave. Pindul Cave is a popular tourist destination with both domestic and international visitors. Tourism managers must be able to provide the best facilities for a wide range of visiting tourists, including those with special needs (disabilities), given the growing number of tourists. The goals of this study are to 1) find a consensual model of deductive training for tourist guides at Pindul Cave that is inclusive, and 2) to create an inclusive tourist guidebook. This is a multi-year study, and in the first year, the research team only reached the limits of identification and conceptual model. The research method used was qualitative, with focus group discussions with targets. Data was collected using observation, focus group interviews, documentation, and questionnaires. Meanwhile, four data analysis techniques are used: data collection, data reduction, data presentation, and conclusion. The research findings yielded a conceptual model of inclusive-based training for tour guides that includes three components: (1) identifying needs, (2) training planning, (3) implementing training programs, and (4) evaluating training. Meanwhile, the guidebook will be used for testing in the second year of this study.

Keywords: inclusive tourism; deductive training model; tour guide.

JEL Classification: Z32; M53; J14; R11.

Introduction

The development of tourism in Indonesia is accelerating. This is because the tourism industry is regarded as capable of contributing to the country's economy. Tourism is regarded as a savior sector and has become a favorite because, for almost two decades, the growth of the tourism sector in Indonesia has been improving and becoming more stable as a foreign exchange earner for the country. If the tourism sector in Indonesia is well developed, it will catalyze development in the country. (Yoeti 2008). The tourism industry can bring prosperity to the community. This is consistent with (RI Law 2009) no. 10 of 2009 concerning Tourism, which states that the implementation of tourism is aimed at increasing national income to improve the welfare and prosperity of the people, expand and equalize business and employment opportunities, encourage regional development,

introduce and utilize tourist objects and attractions in Indonesia, and foster a sense of love for the land water and strengthen international friendship.

The development of tourism is very rapid from year to year, as evidenced by an increase in the number of domestic and foreign tourist visits. Tourism development has been widely undertaken to use tourism as a development agent (Sharpley 2008; Sharpley 2002; Smith 2003). Tourism can be developed in an area based on its tourism potential. By prioritizing tourism development, tourism potential can encourage economic growth (Scheyvens 2002). Pindul Cave is one of Yogyakarta's tourism sectors that draws both local and foreign visitors.

Pindul Cave, which opened in 2010, is a special interest tourist attraction located in the Bejiharjo sub-district, Karangmojo sub-district, and Gunungkidul district. Pindul Cave was never maintained before it became a tourist destination; its existence was used by residents for washing, bathing, and fishing. Because of the presence of many bats and sriti birds, Pindul Cave is thought to be sacred and haunted, and not everyone dares to visit it. Several people attempted to obtain the Sriti cage by riding a tire down the cave while carrying a bamboo tool to pick it up. Pindul Cave is considered to have an attraction that can attract people through the stalactites and stalagmites that are displayed so that residents carry out cave exploration activities by riding float tubes above the underground river starting from the mouth of the cave to the end. has a length of 350 meters and a search duration of approximately 40-60 minutes while trying to clean and test by a group of people. With this, the government established Pokdarwis as a tour guide business unit that serves as a tourist guide to Pindul Cave. As time passes, Pindul Cave attracts an increasing number of local and foreign tourists; tens of thousands of tourists visit each month to take a nature tour through the cave.

The Pindul Cave tourism has increased the economic income of the people of Bejiharjo. Residents who were predominantly farmers have become guides, traders, and managers at Pokdarwis. Pindul Cave comes from the community and returns to it. As a result, the government is collaborating with residents to make Pindul Cave a community-based tourist attraction, creating job opportunities for the community, particularly marginalized groups and unemployed people. This is an approach method that will ensure that residents fully support government programs that will be implemented through a planning process to program realization that cannot be separated from full community participation. Through product promotions packaged both online and offline, everyone plays a role and fully participates in encouraging Pindul Cave to become a special interest tourist attraction visited by potential tourists, both local and foreign. Training such as scouting, foreign language mastery, and digital marketing are held to improve managers' capabilities (bumdesmajumandiri.id).

BUMDEsa Maju Mandiri was established in the Bejiharjo sub-district in 2017 and manages five business units, namely tourism, savings and loans, markets, waste, and rental units. With the establishment of BUMDesa, the village government hopes that economic resources in the Bejiharjo sub-district will develop further, increasing the village's original income. Pindul Cave became one of the business units that contributed the most to the village's original income compared to other business units from 2017 until the second period BUMDES was running. The tourism sector employs 2005 people (bumdesmajumandiri.id).

According to data on the number of visitors in recent years, Pindul Cave has declined in visits over time. The number of visitors who explore the cave is not comparable to the number of visitors who come, accounting for only 30-40% of the total visitors who come. Visitors gave up their intention to explore the cave for a variety of reasons, including being elderly, disabled, sick, or having a fear of water depths (bumdesmajumandiri.id).

It is important to note that Pindul Cave tourism has not been optimal in terms of providing tourist facilities for disabled people and the elderly. Accessibility in the form of facilities, products, and services is critical to support inclusion-based tourism so that everyone can enjoy it. Apart from that, inclusive tourism is a new business opportunity and innovation in the context of developing tourist destination services that are accessible and friendly to all tourists and provide benefits not only to people with disabilities but also to all levels of society. This is, of course, a new challenge for the people of Bejiharjo, particularly the Pindul Cave managers, to realize that Pindul Cave tourism is more high-quality, equitable, and sustainable. Inclusive tourism is intended not only for people with disabilities but also for marginalized communities, with active participation in service delivery. They are not only objects or targets of activities, but also subjects who will fully participate in planning and carrying out activities. In the end, inclusive tourism is more than just introducing new product branding; it also includes supporting disabled-friendly infrastructure, such as road access and disabled toilet facilities. Aside from that, increasing the capabilities of disabled-friendly guides, such as sign language training and scouting ethics, is necessary to support the success of creating inclusive tourism effectively.

The purpose of this study is to develop a conceptual model of inclusive-based deductive training for tour guides so that they can provide the best possible service to all tourists with diverse needs. This is a multi-year

study that will use the ADDIE method. In the first year, the research team will identify the needs of tour guides to develop a conceptual model, which will then be tested and disseminated to Goa Pindul tour guides.

There has been a lot of research on tourism guiding, but research into developing inclusive-based training models for guides is still scarce. This is done so that tourism managers can provide good and appropriate service for all tourists, including those with disabilities.

1. Literature Review

1.1 Deductive Training Model

The deductive training model is a training model that employs a deductive approach to identify general training requirements with broad objectives. If you want to identify training needs for training participants who share similar characteristics, you submit considerations to all training participants. Identification results are believed to be required for all training participants who share the same characteristics. The results of this type of identification are used to create comprehensive training materials. Determining training needs involves considering factors such as educational background, age, and position. Then it evolved into a more specific training and learning process (Kamil 2012).

The advantage of this model is that identification results can be obtained from a wide range of targets, allowing them to be solved at a lower cost and more efficiently. This is because the learning needs information obtained can be used to organize the learning process in training as a whole. However, this model has limitations in terms of effectiveness, because it is not guaranteed that all training participants with similar characteristics will use and require the identification results. This is due to the fact that diverse training participants have different interests and learning needs (Kamil 2012).

The learning needs identified by this model include expected needs, which are those that training participants are generally thought to require. In this model training, the step of identifying learning needs is carried out on a large scale to three target parties as follows:

a. Training participants' families or community members interested in the training.
b. Training implementers, such as leaders, organizers, and trainers.
c. Training participants in each type of learning material that will be developed during the training.

The identification results are then divided into groups of knowledge and skills, and priorities are established. Next, the types of learning needs in the training are identified and developed into a learning program for training participants (Kamil 2012).

1.2 Disability

WHO distinguishes three definitions of disability: impairment, disability, and handicap. Impairment refers to a psychological, physiological, or anatomical structural and functional disorder. Disability is defined as a restriction or loss of ability (due to impairment) to perform an activity in a manner or within limits that appear normal for humans. Handicap is a disadvantage for some people because it limits or interferes with their ability to perform normal tasks.

(Indonesian Law No. 4, 1997) defines disabled as any person who has a physical and/or mental abnormality that interferes with or constitutes an obstacle to his or her ability to carry out activities properly, which includes (a) physically disabled people and (b) people with mental disabilities. (c) Individuals with physical and mental disabilities. (Kezia 2018) defines a disabled person as someone who has a physical or mental disorder that interferes with or prevents them from performing daily activities.

Law No. 4 of 1997 Regarding Persons with Disabilities Paragraph 2 of Article 1 reads as follows: "Accessibility is the convenience provided for persons with disabilities in order to realize equal opportunities in all aspects of life and livelihood". This is reiterated in article 10, paragraph 2, which states, "Providing accessibility is intended to create environmental conditions that better support people with disabilities to live fully in society." There are four principles that must be met in accessibility, including:

a. The convenience principle states that everyone has access to all public places or buildings in a given environment.
b. The usability principle states that all public spaces or buildings in a given environment should be accessible to everyone.
c. The principle of safety states that every building in an environment must consider the safety of all people, including those with disabilities.
d. The principle of independence states that everyone has the right to access and use any place or building in their environment without the assistance of others.

1.3 Inclusive Tourism

According to Meyers (2009), tourism is a temporary travel activity carried out by someone from their original place of residence to the destination area for the purpose of fulfilling curiosity, spending free time or holidays, or for other purposes. other. According to (UU No. 10 of 2009, 2009), tourism is a type of tourist activity that is supported by a variety of facilities and services provided by the community, entrepreneurs, the government, and local governments.

Tourism is an inseparable part of human life, particularly social and economic activities. It began as an activity enjoyed only by a relatively wealthy few at the turn of the twentieth century and has since evolved into a component of human rights. This is not limited to developed countries; it is also beginning to be felt in developing countries. Indonesia, which is still in its development stage, is attempting to establish a tourism industry in order to achieve a balanced foreign trade balance. This industry is expected to increase foreign exchange income (Pendit 2004). According to (Pendit 2004), there are several types of tourism that are well known to the general public, including: 1) cultural tourism, 2) health tourism, 3) sports tourism, 4) commercial tourism, 5) industrial tourism, 6) marine tourism, 7) nature reserve tourism, and 8) honeymoon tourism. Of the various types of tourism mentioned, Indonesia is currently promoting inclusion-based tourism to support SDG goal 11, which is to create safe, inclusive, and sustainable cities and settlements.

Inclusion is a strategy for creating an environment that is welcoming to people from various backgrounds and circumstances. This includes character, physical condition, personality, status, ethnicity, culture, and other factors (Kauffman 2005). Inclusion involves bringing together people of various ethnicities, backgrounds, skills, and conditions into a single group. As a result, inclusion is a condition that occurs within a specific group or structure and focuses on a person's participation (Foreman 2002).

Based on this concept, inclusive tourism can be defined as a travel activity in which people of various backgrounds and conditions can spend their free time or take a vacation.

2. Research Methodology

The research method used in this study was qualitative, with a Focus Group Discussion (FGD) to identify needs. The qualitative research method is a philosophy-based research method used to investigate scientific conditions (experiments) in which the researcher serves as the instrument, data collection technique, and analysis in a qualitative manner that emphasizes meaning (Sugiono 2018).

During the FGD process, the research team used instruments to conduct interviews with respondents or research subjects. This instrument was developed in response to theoretical research on inclusive-based tour guide training. The subjects of this study were 20 Pindul Cave tourism managers, one from each secretariat and two representatives.

Data was collected through observation, interviews, focus group discussions, and documentation. Data analysis was performed in four stages: collecting data from the FGD results with targets, data reduction by sorting the collected identification data, data presentation by describing the results of the data reduction, and finally concluding to confirm the conceptual model training to be performed.

3. Research Results

3.1 An Overview of Research Locations

Bejiharjo Village is part of the Karangmojo District area, Gunungkidul Regency, and has an area of 1825.4825 Ha. Bejiharjo Village is 45 kilometers east of Yogyakarta and takes 1.5 hours to reach by motorbike.

Bejiharjo Village is a village in Gunungkidul Regency's Karangmojo District. The village is closer to the center of Wonosari, the regency capital of Gunungkidul. Bejiharjo Village has extraordinary natural potential. Unlike many areas in Gunungkidul Regency, which have limited sources of clean water, Bejiharjo Village has a constant supply of clean water throughout the year. The clean water supply is provided by underground springs that emerge to the surface.

Aside from natural potential, Bejiharjo Village also has a wealth of culture, history, and education. The Sokoliman Archaeological Site, located in the eastern part of the village, is a scientific heritage related to ancient human history. The Blangkon craft center is located at the west end of the village, and in the center of the village is a very rare cultural treasure known as Wayang Beber. There are only two Beber Wayang Artifacts left in the world, one in Pacitan and the other in Gelaran Hamlet, Bejiharjo Village. In this village, there is also a monument commemorating the history of the Dutch bombing of Bejiharjo Village. Because Bejiharjo was one of Commander General Soedirman's guerrilla routes, the bombing was carried out.

Pindul Cave, one of 12 natural caves in Bejiharjo Village, contains the largest, most, and most active stalactites as well as an interesting panorama of the cave walls, including decorative stone curtains, stalactites stones fused with stalagmites which we often call Column stone, layers of sandstone, and stalactites that grow on cave walls are called Cloustum stone. In the presence of crystal stones and crystalline stones, as well as round curtain wall decorations that resemble hearts, wells, and batik, we can see the panorama and beauty of Pindul Cave. And we can see the process of crystal stone and diamond water. Bejiharjo's natural and cultural wealth has great potential to become a tourist attraction, particularly natural, cultural, and educational tourism.

The community and local figures are fighting for Bejiharjo Village to become a tourist village by having an excellent natural tourist attraction, namely Pindul Cave. A tourism awareness group has been formed in Bejiharjo Village, which brings together people who are aware of and willing to process and develop Bejiharjo Village into a tourist destination village. "DEWA BEJO" stands for Bejiharjo Tourism Village and is a tourism awareness group. The Tourism Awareness Group is a community group concerned with regional progress through tourism.

The Dewa Bejo Tourism Awareness Group (Pokdarwis) was established on Wednesday, June 30, 2010. The natural potential of Bejiharjo Village, including the natural attractions of Pindul Cave, Glatik Cave, Panglima Jendral Sudirman Monument, and the legends surrounding it, inspired the formation of this Tourism Awareness Group. is in Gedong (Sendang Tujuh Legend, Wali Aji Legend, Sobatullah Legend, and Sepetaking Legend).

The Pindul Cave tourist attraction, which is located under the mountain with water flowing underneath with a length of 300 m, a width of 4 m, a water surface height of 3.5 m, and a water depth of 3-4 m, travel time 50 meters. minutes, was officially opened by the Regent of Gunungkidul on October 10, 2010, to coincide with the FAM TOUR of Gunungkidul Regency Officials. The most active, largest, and most numerous stalactites, as well as various stone shapes such as heart stones, batik stone lungs, and stones that when struck make a sound like the sound of the gamelan, can be found at the Pindul Cave tourist attraction; all of these are priceless natural treasures. In addition to natural tourist attractions, Wayang Beber (Remeng Mangun Joyo), Megalithic Sites, and the Sokoliman Cultural Reserve are cultural tourist attractions. There are also Blangkon craft tours in Bulu Hamlet, Bag Crafts in Grogol Hamlet, Legondo traditional food, and Wella Cake & Rosella Tea.

With the various types of potential that exist in Bejiharjo Village, including natural potential, cultural potential, craft potential, and culinary potential, the community has the confidence to form the Bejiharjo Village Tourism Awareness Group, also known as Pokdarwis Dewa Bejo. This is, of course, based on the potential that exists in the community to be managed so that it can make a positive contribution in the form of community empowerment in Bejiharjo Village. Since June 30, 2010, the tourism management managed by Pokdarwis Dewa Bejo has been able to provide positive changes to the community's welfare.

At the start of the establishment of Pokdarwis Dewa Bejo, there were only about 11 people on the management team, but as time passed and organizational dynamics changed during the five-year journey of tourism management, there were various changes in the management as well as the emergence of various secretariats in the Bejiharjo Village area.

3.2 Based on Inclusive Tourism, a Deductive Training Development Model for Guides

Pindul Cave is a tourist attraction of special interest. Of course, the existing attraction must be balanced with adequate facilities for organizing tourism activities that can reach all segments of society. The uniqueness of Pindul Cave, which presents community-based tourism activities, serves as a starting point for researchers in determining research locations that focus on inclusive tourism.

According to World Health Organization (WHO) data, people with disabilities account for 15% of the world's population (1 billion people). Access to all tourism facilities, products, and services must be a primary concern of any sustainable tourism policy. Human rights are only one aspect of inclusive tourism. However, this is a business opportunity for tourist destinations as well as all policymakers to embrace all tourists and increase their income. Furthermore, inclusive tourism is a means of achieving SDG 11: creating safe, inclusive, and sustainable cities and settlements.

Meanwhile, due to a lack of awareness, understanding, and sensitivity of tourist attraction providers to the needs of people with disabilities, inclusive tourism has not become a focus of development in Indonesia. People with disabilities are still not well served by public facilities and infrastructure. In the world of tourism, people with disabilities face numerous challenges, including:

a.Professional staff's limited ability to inform and provide solutions regarding the accessibility of tourism services.

b.Booking services and related web resources that are difficult to access to obtain information about the feasibility and level of accessibility of certain tourist destinations.

c. There are no public facilities for people with disabilities, such as hotel rooms, restaurants, shops, airports, or toilets.

d. Lack of disability equipment and road access for people with disabilities (wheelchairs, ramps, guiding blocks, etc.)

Indonesia, a country rich in tourist destinations ranging from extraordinary natural beauty to enchanting cultural diversity, a wealth of traditional culinary variations that pamper the taste buds to modern destination innovations that are no less stunning, must pay attention to this condition as a great opportunity to improve the quality of the tourism sector.

The development of tourism infrastructure that is inclusive, accessible, and friendly to all types of tourists benefits not only people with disabilities but also all levels of society. The realization of inclusive tourism is proof of the realization of quality, fair, and sustainable tourism. Benefits from the revival of tourism and the creative economy are possible with this approach. If optimized, inclusive tourism has a high economic potential.

However, there are still many tourist attractions in Indonesia that do not yet have infrastructure that is accessible to all types of tourists. This can be seen in the various public facilities available, such as transportation facilities, terminals, traffic signs, road directions, crossings, and public toilets, which are not fully equipped with easy access for people with disabilities.

Apart from that, the limited information that can be accessed through various forms of media, such as special communication tools for deaf tourists and braille facilities for blind people, are also very rare in Indonesian tourist destinations. Various factors have contributed to the Indonesian policy system's inability to remove the barriers that the community faces in accessing inclusive public services. These factors include the economic capability gap between one destination area and another, the physical and demographic conditions of the surrounding population, the intellectual level of understanding of the needs of disabled people by the local community, and low demand.

The conditions outlined above provide funding for researchers to travel directly to the field to observe tourism activities in progress. As a result of interviews, observations, and documentation, findings about the implementation of inclusive tourism were gathered. Several important points to consider when providing tourism activity services include the facilities and competency of guides in guiding tourists through tourism activities. The findings of the analysis, which included FGD activities, interviews, and observations, reveal that there are several major concerns among tourism managers in the Pindul Cave area about establishing the area as an inclusive tourism area. Some of the key points are:

a. Inadequate facilities for tourists with special needs.

b. Managers prioritize post-pandemic recovery.

c. Guides struggle to communicate effectively with tourists with special needs.

d. No rides available at Pindul Cave.

e. Guides have not received training to assist tourists with special needs.

This is consistent with the respondent's statement, which stated that:

"In Pindul Cave there are no facilities available to support tourists with special needs, apart from that the secretariat friends have never attended training to facilitate tourists with special needs even though the friends here are all BNSP certified as tour guides." (U.S/W/14/10/23)

The presence of limitations in managing tourism activities, particularly in meeting the needs of tourists with special needs, is the foundation for inadequate inclusive tourism services. The difficulty of developing inclusive tourism activities is consistent with the limited budget for optimizing services such as disability-friendly public facilities, which, of course, require funding. Aside from that, the limited ability of tour guides in the Pindul Cave area to communicate with tourists with special needs must be strengthened so that they can meet the demands of inclusive tourism, not only in terms of communication but also in other service areas. Aside from that, alternative rides such as Virtual Reality Goa Pindul can be a solution for tourists with special needs, but they require special equipment and guides who are knowledgeable about these rides. This is consistent with the respondent's statement, which stated that:

"apart from training guides, we also need facilities or some kind of application that tourists can use to see the beauty of Pindul Cave without having to enter it." (L.K/W/14/10/23)

Researchers began developing a deductive training model to improve the capability and quality of services provided by tour guides in the Pindul Cave Tourism Area by addressing several existing critical issues. After considering various alternatives and existing potentials and obstacles, the researchers decided to design a deductive training model for inclusive-based tour guides in Pindul Cave to help the Pindul Cave area become a disability-friendly tourist destination.

Based on the conditions mentioned above, the conceptual model for deductive training for inclusive-based tour guides in Pindul Cave is as follows:
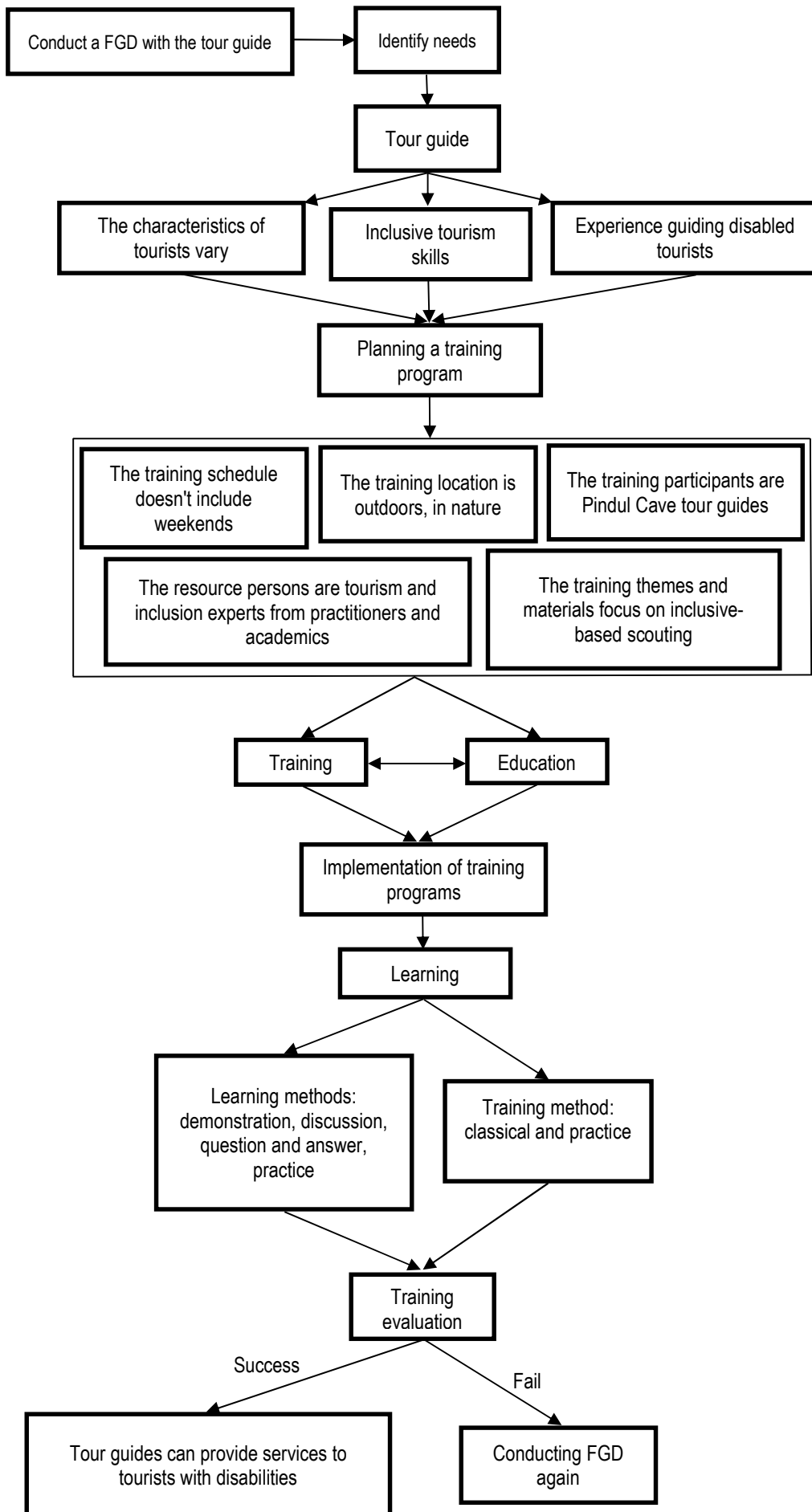
Table 1. Shows the Results of The Conceptual Model of Training for Inclusive-Based Tour Guides

Aspect	Component
Identify Needs	• The characteristics of tourists who visit Pindul Cave are diverse, requiring special services • Tour guides lack the necessary skills to provide inclusive services to tourists • They have never received inclusive-based scouting training • Some facilities do not yet offer services for inclusive tourists
Training Planning	• The training schedule is tailored to the tour guides' availability, *i.e.*, not during working hours or weekends • Training takes place outdoors in the Pindul Cave tourism area • Participants are tour guides accompanied by secretariat representatives • Resource persons are experts in inclusiveness and tourism, including practitioners and academics • The training focuses on inclusive-based scouting • Resource persons are experts in inclusiveness and tourism, including practitioners and academics • Training focuses on inclusive-based scouting • Infrastructure can be collaborated with BUMDes • The research team collaborated with resource persons to develop training evaluation tools
Implementation of Training	• The training was implemented over two days, each lasting six hours. The training lasts 12 hours and includes both classical and practical methods • The training learning methods used include demonstration, discussion, question and answer, and practice
Training Evaluation	• Evaluation uses pre-prepared instruments to assess the effectiveness of the training model • If effective, the model will be further developed in the second year • If less effective, another FGD with targets will be conducted to find a solution

Source: Results of FGD with guide

The table shows four aspects of the consultative model of inclusive-based training for tour guides: needs identification, training planning, training implementation, and training evaluation. Deductive training for guides in the Pindul Cave tourist area is expected to provide them with the knowledge and skills needed to serve tourism activities for all segments of society. So that the Pindul Cave tourist area can eventually become an inclusive tourism destination.

Inclusive tourism is a growing paradigm that aims to provide equal access to tourism activities for all. This is especially true for people with disabilities, whose existence is often overlooked. Law number 8 of 2016 concerning persons with disabilities states that the state must fulfill the rights of persons with disabilities, one of which is the right to travel. The right to travel for people with disabilities must be realized through tourist destinations that can meet their needs. People with disabilities require assistance in the form of special facilities and infrastructure that are built according to the type of disability they have to participate in tourism activities. As a result, the government and other tourism organizers must commit to creating inclusive tourist destinations that are easily and comfortably accessible to people with disabilities.

```
┌──────────────────────────────┐      ┌──────────────────┐
│ Conduct a FGD with the tour  │ ───► │  Identify needs  │
│           guide              │      │                  │
└──────────────────────────────┘      └──────────────────┘
                                               │
                                               ▼
                                      ┌──────────────────┐
                                      │    Tour guide    │
                                      └──────────────────┘
```

| The characteristics of tourists vary | Inclusive tourism skills | Experience guiding disabled tourists |

```
                        ┌──────────────────────┐
                        │ Planning a training  │
                        │      program         │
                        └──────────────────────┘
```

| The training schedule doesn't include weekends | The training location is outdoors, in nature | The training participants are Pindul Cave tour guides |
| The resource persons are tourism and inclusion experts from practitioners and academics | | The training themes and materials focus on inclusive-based scouting |

| Training | ◄──► | Education |

```
                ┌──────────────────────────────┐
                │ Implementation of training   │
                │          programs            │
                └──────────────────────────────┘
                               │
                               ▼
                        ┌──────────────┐
                        │   Learning   │
                        └──────────────┘
```

| Learning methods: demonstration, discussion, question and answer, practice | Training method: classical and practice |

```
                        ┌──────────────┐
                        │   Training   │
                        │  evaluation  │
                        └──────────────┘
                    Success ◄──    ──► Fail
```

| Tour guides can provide services to tourists with disabilities | Conducting FGD again |

4. Discussions

In this case, the development of an inclusive-based tourism training model refers to the CBT (Community Based Tourism) concept. This concept emphasizes the community's ability to manage and develop disabled-friendly tourist attractions on their own. This is consistent with Saunsri's (2003) opinion that CBT is a tool for community development and environmental conservation, or, in other words, a tool for realizing sustainable tourism development. This statement was reinforced by Ainun *et al.* (2019), who stated that CBT is a tourism development approach that emphasizes local communities, whether directly involved in the tourism industry or not, in the form of providing opportunities or access in tourism management and development. Bejiharjo Village's main attraction is its unique natural resources. This is demonstrated by the existence of Pindul Cave as a symbol of its unique nature.

The model developed begins with the collection of initial data about the target community's condition and potential, followed by the creation of a program, training, and program assistance. This is consistent with the stages of a systematic approach to training proposed by Buckley and Caple (2007), which include: 1) identifying training needs, 2) designing training, 3) implementing training, and 4) assessing training effectiveness. An inclusive tourism development training program guide was created as part of the implementation. The term guide refers to a type of direction and guidance for information channels used in the process of storing information learned in class. Guides are instructions and guidelines for materials used to assist facilitators/instructors in conducting learning activities. Learning materials are instructional products that consist of materials, techniques, and tools used to achieve learning objectives. Using a guide with teaching materials will provide numerous advantages, including clarifying the message conveyed, overcoming the limitations of the senses, space, and time, overcoming students' passive attitudes, and providing interesting and varied experiences.

The inclusive tourism community-based tourism development model guide was chosen based on the following considerations: 1) meeting the learning needs of the community-based tourism development model program by utilizing local potential in students, 2) facilitators can use it as a strategic tool in environmentally conscious education through inclusive tourism development, 3) can be used by students to study independently, and 4) can teach students to develop inclusive tourism. This is consistent with the expected outcomes of public education, namely: (1) increasing participation in learning about oneself and one's environment to be more productive. (2) Increasing community empowerment by increasing knowledge, entrepreneurial motivation, and entrepreneurial skills by leveraging productive local potential

The developed guide has several advantages, including making it easier for facilitators to teach the material, making it easier for students to understand the learning material and the availability of a learning guide that is specifically designed to foster student learning motivation to improve student learning outcomes. The characteristics of an effective guide (Ministry of National Education, 2008) include: 1) it focuses on real problems and urgent needs for learning participants in the tourism village women's empowerment model through community-based education by exploiting local potential through entrepreneurship in culinary services by exploiting local potential, 2) following the learning skills required by students, 3) developing active learning for students, a model of empowering.

Following that, training will be implemented following the training model development design, which was created based on the findings of the Focus Group Discussion (FGD) with prospective training participants, specifically tour guides. This activity, of course, necessitates collaboration with partners, particularly the tourism management of Pindul Cave, which is currently managed by BUMDes Maju Mandiri. According to Carmody (2013), stakeholder or partner involvement in the learning process is required for non-formal education training. This training activity will be attended by representatives from each Pindul Cave tourist guide secretariat, as well as practitioners and academics. It is hoped that after completing this training, Pindul Cave tourism managers will be able to provide adequate and appropriate services to tourists, particularly disabled tourists. According to Chen and Mo (2014), to achieve accurate field interpretations, training participants must share ideas, debate, and discuss with others.

Conclusions and Further Research

Pindul Cave is a popular natural tourist attraction with both domestic and international visitors. The number of tourists visiting each day is increasing, requiring tour guides to provide the best possible facilities and services to a diverse range of tourists, including those with disabilities. This effort takes the form of increasing competency through all-inclusive tour guide training. This training model was created to meet the needs of tourist guides who are enthusiastic and motivated to provide inclusive tourism services in Pindul Cave. This research resulted in the development of a conceptual model of training that is viewed from four perspectives: (1) identification of needs,

(2) training planning, (3) implementation of training programs, and (4) training evaluation, each with its component. -separate components to create an inclusive, conceptual model of tour guide training. The second is a training guidebook for inclusive-based tour guides, which will be tested and distributed in the second year.

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Credit Authorship Contribution Statement

Iis Prasetyo: He served as lead researcher, providing direction and a conceptual framework for this study. Aside from that, he was involved in data collection and analysis.

Adin Ariyanti Dewi: He serves as a research associate. He oversaw the composition of the instruments. Aside from that, he was involved in the entire data collection, analysis, and conclusion-making process.

Akhmad Rofiq: He serves as a research participant. He is in charge of developing research needs and establishing communication with targets or training participants. Aside from that, he was involved in the entire data collection, analysis, and conclusion formulation process.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-assisted Technologies

The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.
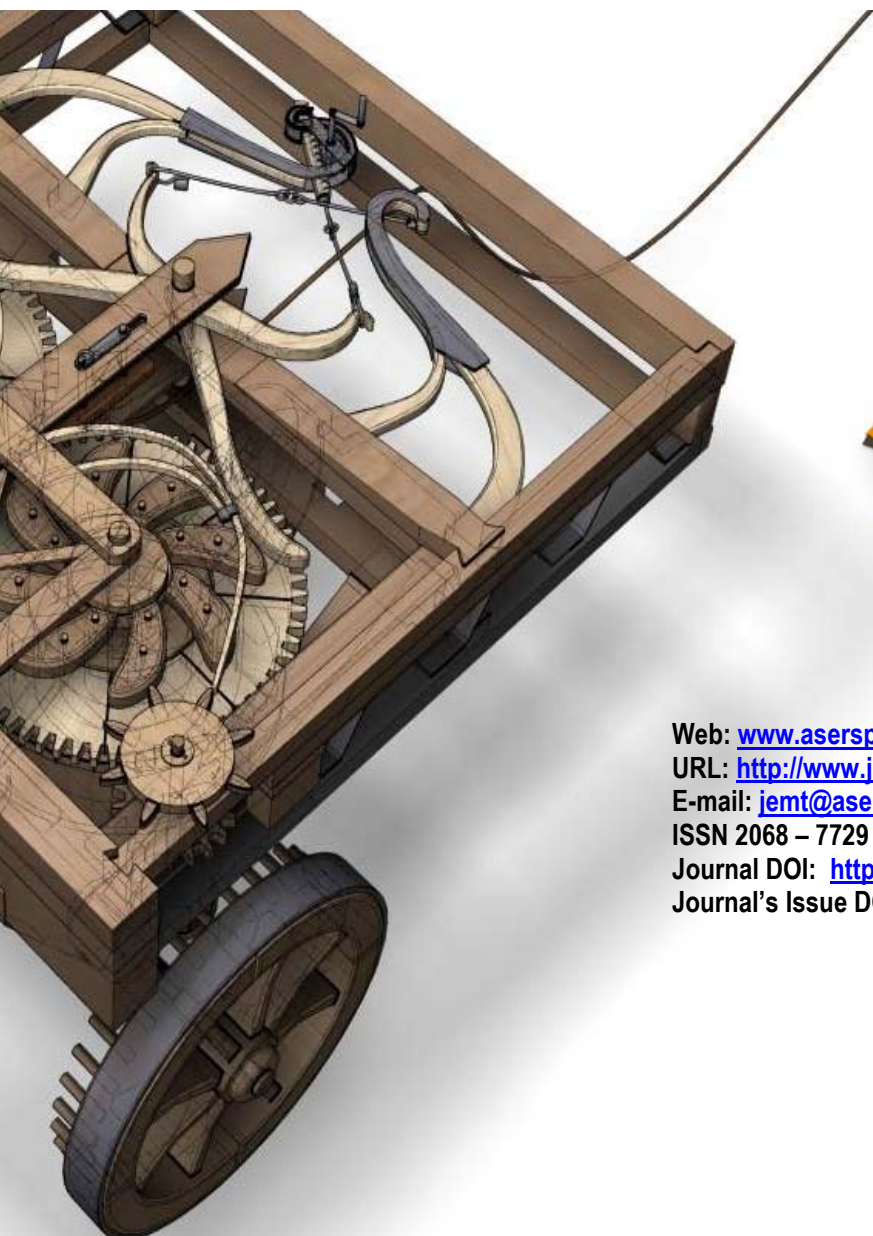
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